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"A Descriptive Analysis of New Jersey's Low-Achieving, Focus and Priority Schools"

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“A Descriptive Analysis of New Jersey’s Low-Achieving, Focus and Priority Schools”

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APPROVAL FOR SUCCESSFUL DEFENSE

Lisa Lin Schneider has successfully defended and made the required modifications to the text of the doctoral dissertation for the **Ed.D.** during this Semester.

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Dedicated to

Laci, Anna, and Austin…

never give up on your dreams.

In loving memory of Bill.

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TABLE OF CONTENTS

Chapter 1: Introduction

Background

The onset of research focusing on equality in education began with Section 402 of the Civil Rights Act of 1964, which called for an extensive national study investigating characteristics of both school and student populations contained within the nation's public schools. A major finding of the groundbreaking study known as *The Coleman Report (1966)* was the impact of student socio-economic status on academic achievement. According to Hanushek (2016):

> *The finding in the Coleman Report that family-background factors powerfully affect student achievement is not and never has been disputed. Virtually all subsequent analyses have found measures of family background (parents' education, family structure, and so forth) to be a significant explanation of achievement differences, (p. 23).*

Since then, research and policy has sought to mediate the resulting disparity across student populations by seeking equality in student achievement. In 1965, President Lyndon B. Johnson's *War on Poverty* was targeted, in part, at addressing this concern. As a result, Congress enacted *The Elementary and Secondary Education Act (ESEA*) giving extensive funding to the nation's poorest schools. For the first time, federal legislature established high standards and subsequent accountability.

In 1975, New Jersey passed the *Public School Education Act (PSEA*) which sought to ensure adequate proficiency levels of all students, including its poorest children. *PSEA* gave schools the power to utilize standardized testing as a graduation requirement. With this power, New Jersey launched the *Minimum Basic Skills Test (MBST)* in reading and math for all third, sixth, and ninth grade students, with 1982 being the first graduating high school class required to pass the *MBST*. Only one year after, the *Grade 9 High School Proficiency Test (HSPT9),* a

more rigorous assessment in reading, math, and writing, was developed and became the new graduation requirement for students beginning with the graduation year of 1986. In 1988, an additional assessment was developed for 8th grade students called the *Grade 8 Early Warning Test*. In 1996, the New Jersey Board of Education adopted the *New Jersey Core Curriculum Content Standards of New Jersey (NJCCCS*). Specific target standards were identified for all students at the fourth, eighth, and high school levels. Mastery of grade level proficiencies was assessed in grade four on the *Elementary School Proficiency Assessment (ESPA*), in grade eight on the *Grade Eight Proficiency Assessment (GEPA)*, and in eleventh grade on the *High School Proficiency Assessment (HSPT*).

It is important to remember, the intent of standardized assessments was to ensure equality in education for all New Jersey students by measuring student achievement of standards deemed necessary for success in college and careers. However, a secondary outcome of the state assessments arose as school assessment results were publicized and utilized as a method for ranking New Jersey's school systems. In 1975, in an effort to create more fair comparisons, the NJDOE developed District Factor Groups (DFGs). District Factor Grouping is a New Jersey specific method for categorizing schools based on seven variables of a town's population: attainment of high school diploma, attendance of college, occupation, income, unemployment, poverty status, and population density (Bao et al, 2006). Combined, these variables give a relative depiction of a town's socio-economic status.

Based on the criteria, each town received a rating of A through J with A indicating the highest level of correlation to variables negatively impacting student achievement (Bao et al, 2010). The purpose of the DFG ranking was to fairly interpret standardized test scores across the state of New Jersey (Bao et al, 2010). According the NJDOE, "The 1975 DFG report

summarized research indicating that student performance is affected not only by the quality of the educational services received in the school building, but also by students' background characteristics, particularly those relating to their parents," (NJDOE DFGs for School Districts, 2004).

A secondary function of DFGs is use in classification of a school district as an Abbott district. The Abbott vs Burke Court decision determined that New Jersey's school funding was failing some of New Jersey's neediest children. As a result, Abbot district classification was created to provide additional funding and resources to poorer urban districts.

Despite the increased focus on test results in New Jersey and across the nation, at the turn of the century, the concern for equality in education, and ultimately the resulting disparity in student achievement, continued. In 2001, President George W. Bush reauthorized *ESEA* as *No Child Left Behind (NCLB)*, once again calling for equality in student achievement results. *NCLB* continued to require schools to adhere to high standards. Achievement of standards was measured through standardized testing at specific grade levels.

In response to *NCLB* demands, revisions were made to the *New Jersey Core Curriculum Content Standards* in 2003, and again in 2004. A new state test, the *New Jersey Assessment of Skills and Knowledge (NJ ASK*) eventually replaced all three former state tests (*ESPA, GEPA* and *HSPT*) and tested grades were expanded to include all students in grades three through eleven.

NCLB further required school districts to provide annual information to the public regarding the status of each school. As a result, New Jersey's Department of Education created the *New Jersey School Report Card*. As school assessment results were publicized, inevitably, they were utilized as a method for ranking New Jersey's school systems.

In 2011, New Jersey Education Commissioner Cerf obtained a waiver from the criteria and accountability of NCLB. As part of the agreement within the waiver Commissioner Cerf agreed to create a classification system for New Jersey schools based solely on student achievement. The intent of this program was to reward the high-achieving schools and target the low-achieving schools for improvement. The *New Jersey School Report Card* was utilized as a method for determining which of New Jersey's schools were most and least effective using a three-year look-back period. Data results from the *NJ ASK* given over three academic years, 2008-09, 2009-10, and 2010-11 would be used to potentially categorize any of New Jersey schools into one of three categories (NJDOE, 2011). It should be noted that not all schools were categorized, only schools that met the criteria.

New Jersey Reward School status was given to any school meeting one of two criteria sets. *High Performing* schools demonstrated the highest test scores during the three-year collection period, including all subgroup proficiencies. Additionally, schools with high graduation rates during these specific years were also named *Reward Schools*. *High Progress Schools* demonstrated the highest median growth from the start to the end of the collection period. One hundred and twelve New Jersey schools were named *New Jersey Reward Schools* (NJDOE, 2012).

Schools identified as New Jersey's *Focus Schools* had the most "room for improvement," (NJDOE, 2012, p. 1). One hundred and eighty-three schools were named based on meeting one of three sets of criteria. Any school with less than 75 percent of students graduating during the data collection years was named a *Focus School* based on *Low Graduation Rates*. Schools with the largest proficiency gaps among subgroups were named *Focus Schools* based on *Largest Within-School Gaps*. Any school with the lowest performing

subgroups were named *Lowest Subgroup Performance Focus Schools*. According to the DOE (2012), there are 183 *Focus Schools*.

The third category, *Priority Schools*, related only to Title I schools. One of two criteria set net New Jersey's *Priority Schools*. First, any New Jersey school previously named a *School Improvement School (SIG)* was also deemed a *Priority School*. A second group of *Priority Schools* was net based on lowest overall school proficiency or graduation rates over the three-year period. Seventy-five New Jersey schools were named *Priority Schools* (NJDOE, 2012).

New Jersey's 2011 *Focus or Priority and Reward* school classification system shows predictable alignment to the existing body of research on variables impacting student achievement. Of the 57 Reward schools, 31 schools are from the New Jersey's high socio-economic status districts and 14 schools are from the high-average range of economic wealth (Educational Law Center, 2013). Additionally, 21 of the 57 schools are from "highly selective" vocational and charter schools, 14 of which require a "high standardized test score" for admittance (Educational Law Center, 2013). Only 7 schools were lower socio-economic status schools, two of which house gifted and talented programs, and others were again charter schools that enroll a disproportionate number of special education and English language learners when compared to their local public schools (Educational Law Center, 2013).

Teacher Quality and Characteristics

The New Jersey Focus, Priority, and Reward school classification system identifies schools as underachieving. Consequently, the teachers within these schools are perceived as underperforming. Presumably, the teachers are held accountable for raising student achievement. These high-pressure conditions have been amplified by recent legislation

through *Achieve NJ* which links teachers' performance rankings to student achievement. This classification system provides us with a unique opportunity to better understand the qualities of teachers within schools labeled as underperforming.

A look at the research on variables impacting student achievement lends insights to Focus and Priority school classifications. Such research reveals both student-related variables and teacher-related variables significantly impact student achievement. The greatest variance in student achievement may be attributed to the student-related variable of socio-economic status (Coleman, Malone, 2002; McKenzie et al, 2005; NAEP, 2008; OECD, 2007). Not surprisingly, research indicates teacher-related variables impact student achievement (Stedman, 1997; Darling-Hammond, 2000; Jordan et al, 1997; Mendro, 1998; Sanders and Rivers, 1996). Teacher quality may be measured in three ways: teacher qualifications, teacher characteristics, and teacher practices (Goe, 2007). Teacher qualifications including preparedness and experience have demonstrated an impact on student achievement (Hanushek, 1989, 1997; Henge, 1989; Greenwald et al, 1996; Wayne and Youngs, 2003). Research also indicates student achievement is influenced by teacher characteristics including mobility and attendance (Bayard, 2003; Boswell, 1993; Clotfelter, Ladd, and Vigdor, 2009; Kirk, 1998; Manlove and Elliot, 1997; Miller, Murnane, and Willett, 2007; Tingle et al, 2012).

Statement of the Problem

Since *The Coleman Report* (1966) highlighted the achievement gap between whites and minorities, subsequent research has sought to identify variables most impactful in mediating the disparity. Research has shown that certain schools are more effective than others, even after controlling for socio-economic variables. According to Sanders (1998) the teacher

has the greatest influence on student learning, second only to socio-economic status. Both state and school policies regarding certification, hiring, and retaining staff are developed based on teacher qualities including teacher qualifications and teacher characteristics. Teacher level of education and experience have demonstrated a significant effect on student achievement (Hanushek, 1989, 1997; Henge, 1989; Greenwald et al, 1996; Wayne and Youngs, 2003). Notably, teacher credentials impact high school and middle school populations to a greater extent (Boyd et al, 2008; Goe, 2007). Teacher characteristics including mobility and attendance also influence student learning (Bayard, 2003; Boswell, 1993; Clotfelter, Ladd, and Vigdor, 2009; Kirk, 1998; Manlove and Elliot, 1997; Miller, Murnane, and Willett, 2007; Tingle et al, 2012). Specific teacher-related variables have a higher, negatively-associated occurrence in low-achieving populations (Feng 2009, 2010; Haycock, 1998l Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). The New Jersey Focus or Priority Schools classification system provides us with a proxy for understanding teacher characteristics within low performing schools. Such analysis will provide insights to current policies regarding attainment and retainment of teachers, licensure, and potential school-level staffing policies.

Purpose of the Study

The purpose of this study is to describe the characteristics of schools and the teachers within a low-performing population of schools. Prevalent within empirical literature is the notion that specific teacher-related variables have a higher, negatively-associated occurrence in low achieving populations (Feng 2009, 2010; Haycock, 1998; Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). Research indicates teacher-related variables have a significant influence on student achievement (Stedman, 1997; Darling-Hammond, 2000; Jordan et al, 1997;

Mendro, 1998; Sanders and Rivers, 1996). A review of the literature identifies specific teacher-related variables found on the New Jersey School Report Card which have demonstrated an impact on student achievement. The teacher's level of education and years of experience, variables both found on the New Jersey School Report Card, have a demonstrated influence on student performance (Akiba et al, 2007; Betts, Darling-Hammond, 2009; Dee, 2004; Feng & Sass, 2013; Zau & Rice, 2003).

Additionally, some research has shown specific variables, including level of education, impact student achievement to a greater extent at the middle and high school levels (Boyd et al, 2008; Goe, 2007). Therefore, this study will describe the teaching force within a locally identified, low-achieving population of middle and high schools, the New Jersey Focus and Priority schools.

Main Research Question

1. What are the descriptive characteristics of low-achieving middle and high schools?
2. What are the characteristics of teachers within low-achieving middle and high schools?
3. What combination of school and teacher-related variables best distinguishes priority and focus schools?

Significance of the Study

The study contributes to a large body of evidence that examines school and teacher characteristics and teacher qualifications within schools identified as low-performing. This study adds to the current research investigating the impact of school and teacher-related variables on student achievement.

Current educational policy in New Jersey emphasizes the correlation between teacher effectiveness and student achievement as measured by teacher practice. This study describes the variables related to quality and characteristics within a group of schools identifies as low-performing.

Consideration of these variables will provide state governance with information when developing future licensure guidelines. Additionally, administrators would have further insight when hiring and retaining staff. Knowledge of teacher-related variables is important to consider when creating school policy related to staffing, such as attendance and longevity incentives, particularly in low-achieving schools. Comparison of variables across high-achieving and high-growth versus low-achieving and low-growth schools would allow administrators to weigh the importance of each variable in relation to the particular needs of a school.

Limitations

This study is limited by its use of descriptive statistics and therefore should not be seen as evaluative. The study does not employ research methods that determine causal relationships, but instead seeks to understand the characteristics of the teaching populations within low-performing schools.

This study is further limited in its use of the New Jersey School Report Card as its method of data collection. The New Jersey School Report Card does not include measurements of teacher quality, such as observations of teacher practice. Therefore, this study is also limited by its exclusion of measurements of teacher practice. Measurements of teacher practice are used to evaluate the effectiveness or potential effectiveness of teachers. The descriptive design

of this study is intended to further understand the qualities related to preparedness and characteristics within a low-performing teaching force.

Delimitations

This study is delimited by selecting middle and high school districts classified as a New Jersey Focus or Priority school. It is further delimited in its selection of teacher attainment of an advanced degree, teacher attainment of a specialized academic degree, teacher experience, teacher mobility, and teacher attendance as teacher-related variables.

Definition of Terms

Advanced degree: attainment of a Masters of Art (MA), Masters of Science (MS), Doctor of Philosophy (PhD), or Doctor of Education (EdD)

Faculty Mobility: percentage of teachers and non-administrative staff who entered and left the school during the school year (NJ DOE Report Cards, 2011)

Focus School: 183 New Jersey schools identified as low performing based on lowest performing, low graduation rates, lowest subgroup performance, and largest gaps between school gaps

Focus School- Largest Within School Gaps: schools with the largest in-school proficiency gap between the highest-performing subgroup and the combined proficiency of the two lowest-performing subgroups; Schools in this category have a proficiency gap between these subgroups of 43.5 percentage points or higher (NJDOE, 2017).

Focus School Lowest Graduation Rates: high schools with a 2011 graduation rate lower than 75% (NJDOE, 2017)

Focus School- Lowest Sub-group Performance: schools whose two lowest-performing subgroups rank among the lowest combined proficiency rates in the state; Schools in this category have an overall proficiency rate for these lowest-performing subgroups of 29.2% or lower (NJDOE, 2017).

New Jersey Assessment of Skills and Knowledge (NJ ASK): the standardized test given to all public school students in grades 3-11 between the years 2003 and 2015; The NJ ASK replaced the Elementary School Proficiency Assessment (ESPA) as the means to measure academic achievement in New Jersey schools.

New Jersey School Report Card: In response to requirements of No Child Left Behind, New Jersey's Department of Education historically released an annual statistical report of each New Jersey school that included state standardized testing results and status toward required Annual Yearly Progress (AYP).

Priority School: 75 New Jersey Title I schools identified by the New Jersey Department of Education as the lowest performing 5%, as measured by the New Jersey Assessment of Skills and Knowledge and graduation rates, or any school previously categorized as at SIG school

Reward School: 112 New Jersey schools identified by the New Jersey Department of Education as high achieving or high growth as measured by the New Jersey Assessment of Skills and Knowledge and graduation rates

School Improvement Grant School (SIG): a New Jersey school deemed low performing and therefore receiving funding from state grant money targeted for specific improvement; School Improvement Grant funding was authorized by the Elementary and Secondary Education Act

and reauthorized by No Child Left Behind. SIG schools automatically received classification as a Priority school.

Standardized Test: assessment with controlled conditions for administration and scoring

Title I School: any school receiving funding based on percentage of the student population deemed poor; Title I grants are funded through No Child Left Behind Legislature with the goal of helping to ensure fairness and equality in education for the nation's poorest students.

CHAPTER II: REVIEW OF THE LITERATURE

Variables Impacting Student Achievement

The Coleman Study first established the need to consider variables outside of classroom instruction which have a significant impact on student achievement. As Coleman (1966) concluded, student-related variables account for the largest variance on student achievement.

Student-related Variables and Student Achievement

Since The Coleman Report, socioeconomic status of student populations continually proves to be a significant variable with the extant literature. According to the OECD (2007) family income accounts for the variance between school performances to a greater extent than any other variable. Lower socioeconomic status is consistently negatively related to student achievement on standardized tests (OECD, 2006). Results from the National Assessment for Education Progress (2008) demonstrate this impact. On the 2008 NAEP Assessment, sixteen percent of fourth grade students from low income households (as determined by free and reduced lunch qualification) were proficient in reading (NAEP, 2008). In stark contrast, 44 percent of students not receiving free or reduced lunch were proficient (NAEP, 2008). The National Center for Education Statistics found an even greater disparity (28%) between economic subgroup populations (National Center for Education Statistics, 2007).

The research of Malone (2002) found school socio-economic status (or district factor group ranking DFG) accounts for the greatest level of variance (56%) on the state standardized testing, NJ ASK. Mitchel's (2004) study concluded DFG is the strongest predictor of fourth grade student achievement on the NJ ASK. The single student-related variable of receiving free and reduced lunch has been shown to consistently negatively impact student achievement

(McKenzie et al, 2005). A recent study by Turnamian, 2012) analyzed the impact of out-of-school variables and student achievement on the NJ ASK, in both Language Arts and Mathematics. His study concluded that percentage of economically disadvantaged families, parents' level of education, and parent's marital status (single-parent households) combined may predict school level performance on the NJ ASK. The model in this study accurately predicted, within 10 points, student performance on the NJ ASK for 228 New Jersey school districts out of 438 schools, and 262 out of 439 schools, by using only student-related variables.

In some instances, socioeconomic status compounds the effects of other variables. Studies show schools serving predominantly lower socioeconomic student populations attract and retain less qualified teachers, teachers with fewer years of experience, and have a higher percentage of English Language Learners (Akiba et al, 2007; Darling-Hammond, 2009; Recruiting New Teachers, 2000). Conversely, studies show that schools serving higher socioeconomic status populations attract and retain teachers with more advanced qualifications (Darling-Hammond, 2009; Lippman et al, 1996). Teacher mobility rates have been shown time and time again to be higher in poorer school districts (Alliance for Excellent Education, 2008; Allensworth, Ponisciak, & Mazzeo, 2009; Planty, Hussar, William, & Snyder, 2008). Teacher attendance has been negatively correlated with schools with higher percentages of economically disadvantaged students (Pitkoff, 1993). Additionally, schools with lower student achievement, higher levels of poverty, and greater percentages of minority students seem to have difficulties attracting and retaining teachers, and therefore higher teachers with less experience (Alliance for Excellent Education, 2008).

Students with learning disabilities is another student-related variable with a demonstrated impact on student achievement. Students with learning disabilities are a

subgroup within standardized testing. Learning disabilities by nature, have the potential to impact student achievement. Individual accommodations are provided with the intent to mediate this impact. *The Individuals with Disabilities Education Act* (IDEA, 1997) stipulates that testing accommodations for students with learning disabilities must be individually selected. Although this is a federal law, the selection process for testing accommodations is granted to the state (IDEA, 2004). Thurlow (2005) conducted a review of this process, with a specific focus on questionable accommodations such as calculators, read alouds, and the use of a scribe. This study, which focused on the states policies between the period of 1999 and 2001, revealed vast variability in states' practices thereby further suggesting the practice of assigning testing accommodations is by no means a consistent one within governmental policies. Lai and Berkeley (2012) review of state policies regarding the assignment of testing accommodations further validate Thurlow's (2005) findings. According to Lai and Berkely (2012), "Although all states allow test accommodations for students with disabilities, there is a lack of general consensus about which specific ones to allow, restrict, or prohibit," (p. 166).

In regard to individual selection of accommodations within the arguably questionable guidelines provided by the state (Thurlow, 2005), a review of research indicates that such individually selection is complicated and may in fact be largely unsuccessful due to the vast differences within the learning disabled population's needs (Elbaum, Arguelles, Campbell, & Saleh, 2004). It is also worthy to note, often teachers are involved in the process of accommodation selection, however research indicates that teachers do not reliably select specific accommodations that are appropriate or beneficial for their individual students (Helwig & Tindal, 2003; McKevitt and Elliott, 2003). Fuchs (2001) specifically analyzed this selection and found what he concluded to be an over-assignment of accommodations in both

reading and math assessments. In a case study analysis, Rickey (2005) analyzed the decision making processes in three K-12 schools and concluded that the accommodation decisions made by IEP team are primarily assigned based on the accommodation's likeliness to make the testing experience more comfortable for the student or the belief the accommodation would result in higher test scores. This strays from the actual purpose of the accommodation which should in fact primarily remove or reduce barriers presented by a learning disability.

Review of the testing processes, including specific testing accommodations, for students with learning disabilities, gives justification for the inclusion of the student-related variable of learning disabled in this researcher's study. The variable will be included in the logistical regression model for analysis of said variable's potential impact on school-level classification as a New Jersey Focus, Priority, or Reward School.

There is no shortage of research to document the impact of the variable of English Language Learner (ELL) on assessment of student achievement (Aiken, 1971, 1972; American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999; Cocking & Chipman, 1988; DeCorte, Verschaffel, & De Win, 1985; Jerman & Rees, 1972; Kintsch & Greeno, 1985; LaCelle-Peterson & Rivera, 1994; Larsen, Parker, & Trenholme, 1978; Lepik, 1990; Mestre, 1988; Munro, 1979; Noonan, 1990; Orr, 1987; Rothman & Cohen, 1989; Spanos, Rhodes, Dale & Crandall, 1988). Research has documented a negative correlation between the variable of ELL and measures of student achievement in all subject areas, across all grade levels (Abedi et al, 2004; Kieffer et al, 2009). Research from the National Center of Statistics (2005) illustrates this impact in both reading and math where the National Assessment for Educational Progress (NAEP) shows a twenty

percent difference or greater between native English speaking students and nonnative English speaking students in both reading and math.

Gemalarro's (2013) study analyzed the impact of New Jersey Report Card variables on student performance in both Math and English Language Arts on the NJ ASK5. Gemalarro's (2013) multiple regression analysis, consisting of all New Jersey Report Data, provides researchers with a framework with which to conduct further studies.

Specific student-related variables from the New Jersey Report Card demonstrated an influence on student achievement. According to Gemalarro (2013), percentage of students receiving free lunch was the greatest school-level variable shown to have a statistically significant influence on student achievement in both math ($B= 684$; $t= -9.000$; $p<.000$) and English Language Arts ($B= -759$; $t= -13.618$; $p< .000$) on the NJ ASK5. In his study, schools with a higher percentage of students receiving free lunch had a negative correlation with student achievement.

Teacher- Related Variables and Student Achievement

Empirical evidence indicates teacher quality is related to student achievement (Stedman, 1997; Darling-Hammond, 2000; Jordan et al, 1997; Mendro, 1998; Sanders and Rivers, 1996). According to Sanders (1998), teacher characteristics impact student achievement to a greater extent than any other *academic* variables. Gage (1984) declares there is a causal relationship between teacher quality and student achievement. Sanders and Horn's (1998) longitudinal study cautions educators the effects of teacher quality are far-reaching and cumulative. A study conducted by Turek (2004) found "statistically significant and meaningful relationships between teacher quality and high stakes test achievement even after the effects

of poverty were accounted for," (p. 423). Both Sanders and Rivers (1996) and Jordan et al (1997) claim there is a link between the teacher and student learning. Michel (2008) study of 888 NJ schools found a significant positive correlation between teacher-related variables including teachers' holding an advanced degree and student achievement on the NJ ASK 4. According to Goe (2007), many studies related to the teacher variable fail to identify teacher-related characteristics, leaving teacher-related variables as an area in need of further research.

Goe (2007) categorized teacher-related variables as effectiveness (student achievement), practice (observation of teaching), qualifications (education, experience, etc.), and characteristic (attendance, gender, etc.).

Teacher Qualifications

Variables related to teacher qualification include experience, education, and credentials (certification and specialized degrees). Studies by Darling-Hammond (2009) and Akiba et al (2007) conclude teacher-related variables, including teachers' academic background (education) and years of experience impact student achievement to a statistically significant degree. Teacher certifications have been shown to have a positive impact on student learning (Betts, Zau, & Rice, 2003; Dee, 2004; Feng & Sass, 2013).

Goe (2007) conducted a review of existing studies related to teacher qualification and student achievement. The results concluded teacher qualification impacts students in math both elementary and high school levels, but to a more significant degree at the secondary level (Goe, 2007). Boyd et al (2008) found similar results. According to Boyd et al (2008), the area of math has shown a positive relationship between student achievement and the interaction of the teacher-related variables of teacher's experience and preparedness.

There is research to support the assertion that teacher content area expertise has a significant and positive impact on student achievement (Goldhaber and Brewer, 1996; Wayne and Youngs, 2003). Goldhaber and Brewer (1996) found a statistically positive correlation between student performance on standardized math tests and teacher credentials including content area degrees and advanced degrees in the area of math (n-18,000).

Hanushek (1989, 1997) and Henge (1989) debate the effect of teacher's level of education and student achievement. Both Hanushek's (1989) and (1997) meta-analysis concludes there is a lack of empirical evidence to support the link between teacher education and student achievement. Hanushek's first analysis (1989) reviewed 113 studies and found only seven percent revealed a statistically significant positive correlation. In Hanushek's second review, he reanalyzed the same 113 studies, but used value-added measure to account for variation in quality and found an even smaller number of statistically significant positive correlations. Therefore, both of Hanushek reviews (1989) and (1997) concluded there is no empirical evidence to support the impact of teacher education on student achievement.

In direct contrast of Hanushek's conclusion, two researchers concluded that teacher education level has a positive correlation to student achievement (Hedge et al, 1994; Greenwald et al, 1996). The first study by Hedge et al (1989) reviewed the same literature inclusive in Hanushek's review, but employed chi-square and combined effect size methodologies. Hedge et al (1989) concluded there was a positive relationship between teacher education level and student achievement, with a small median effect size of -0.02.

A later review by Greenwald et al (1996), which included a more expansive review of studies than that of both Hanushek (1989, 1997) and Hedge at al (1994), reviewed the predictive variable of teacher education level as well as teacher experience. This more

expansive and comprehensive review concluded that both teacher experience and level of education did in fact have a positive correlation to student achievement with a median effect size of .046 and .0003.

A more recent review by Wayne and Youngs (2003) employed narrative review methodologies. Wayne and Young's selection criteria included students that account for socio-economic status (SES), teacher characteristics in direct relation to student achievement on standardized testing, and students native to the United States. Wayne and Youngs (2003) concluded teacher education level had a positive correlation to student achievement for high school math students and high school teachers with an advanced degree in math. In the areas of history, English, and Science no general conclusions could be made, and further research was recommended.

Teacher Characteristics

Variables related to teacher characteristics found on the NJ School Report card include teacher attendance and mobility.

Researchers have investigated the link between faculty attendance and student achievement. Prevalent within the literature on teacher absenteeism is a practical theoretical argument. As stated by Clotfelter et al. (2007), "common sense suggests that teachers' absences will impede students' academic performance," (p. 17). Miller et al asserts, "Teachers cannot instruct if they are not in school," (Miller et al., 2008, p. 181). It is this belief that seems to have sparred continued research, although initial studies failed to prove teacher absenteeism has a significant impact on student achievement (Keller, 2008a, b; Rogers & Vegas, 2009).

Metangno and Woods (1997) cautioned there must be a negative effect on student achievement when the delivery of instruction by a qualified teacher is interrupted.

A significant amount of research exists indicating teacher attendance does in fact have an impact on student achievement. Boswell (1993) study utilized state assessment data and concluded there was a weak, but statistically significant correlation between teacher attendance and student achievement. Kirk (1998) investigated the relationship between teacher attendance and student achievement of elementary language arts students (n=18,802) and teachers (n=881) and found a weak but statistically significant correlation where teacher absenteeism accounted for less than 1% of the variance. Bayard's (2003) researched the impact of teacher absenteeism on student test scores in the area of mathematics. This study concluded that teacher attendance had a small, but statistically significant impact, however a lesser impact than other teacher-related variables including teacher credentials. The research of Manlove and Elliot (1977) concluded there is a negative correlation between faculty absenteeism and student performance. The research of Woods & Montagno (1997) analyzed elementary school achievement and found teacher absenteeism had a negative impact on standardized test scores as well as student grade point average. Clotfelter, Ladd, & Vigdor, (2009) conducted a comparative study and found teachers with ten additional days out of the classroom in one school year had lower test scores in the area of math by 2.3 standard deviation points and reading by 1 standard deviation. This study was limited by its correlational conclusions. Miller, Murnane, & Willett (2007) conducted a similar study and found that students' math performance went down by 3.3 standard deviations.

A related impact of teacher attendance is, of course, effectiveness of substitute teachers. Substitute teachers, of course, have not only less specialized training and rapport with staff and

students, but also have been statistically shown to have significantly lower levels of education (Olsen 1991). The combined impact of these variables has been negatively associated with student academic performance (Olsen, 1991).

In contrast, there is a body of research indicating teacher attendance does not have a significant impact on student learning. Webb (1995) found a positive, but non-statistically significant correlation between test scores of elementary students and teacher attendance that accounted for less than 6% of the variance. Cay's (2007) study concluded teacher attendance had no statistically significant impact on third and fourth grade students' standardized test scores.

One explanation of the contrasting results may be teacher absenteeism affects student learning differently by subject level. According to Miller (2006), teacher's absenteeism has a greater impact on student achievement in the area of mathematics than English Language Arts.

Comparative studies suggest teacher absenteeism may be less significant than other teacher-related variables. Colquitt (2009) found that teacher credentials (including advanced degrees) had a more significant impact on student achievement.

More recently Tingle et al (2012) concluded the topic of teacher attendance warranted further investigation. Tingle et al (2012) maintain previous research that was either inconclusive, or negated the impact of teacher attendance on student achievement, had either small sample sizes or missing data.

Tingle et al (2012) conducted a study in a large public school with 135,638 diversified students in grades K-8 and 178 schools. The school staff included 8,565 full-time teachers. Teacher absence was reviewed as the independent variable, and student achievement was the dependent variable. Tingle et al (2012) utilized a causal-comparative design. Statistically

significant differences ($p < .01$) were evident in teacher absence across elementary and high schools. Middle school data found more. In middle schools, teacher attendance was impactful at varying levels based on the combined effect of additional variables most prominently the rate of school-wide teacher absenteeism. As Tingle et al (2012) state, "... if a teacher is frequently absent in a school where the average teacher absence is low, the negative relationship is greater between teacher absence and student academic achievement," (p. 10).

A review of literature regarding teacher absenteeism reveals mixed results, with sample size and subject area offering possible explanations for variations in results.

Teacher mobility has long been a concern for the profession. Within the United States, about half of new teachers move schools within the first five years (Ingersoll, 2001). Mobility is particularly of concern in high poverty districts (LiCheng, 2014).

Most of the body of work examining mobility investigates variables impacting teacher mobility. Studies have found student-related variables including family income, ethnicity, and academic achievement negatively impact student mobility (Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). It is important to note research has investigated the link between student-related variables and teacher mobility. Of particular importance is the potential correlation between low-income, low achieving school districts and teacher mobility. Student standardized test performance and behavior have been shown to negatively influence teacher mobility (Feng 2009, 2010; Haycock, 1998).

Researchers have investigated variables that may mediate teacher mobility. Level of support for teachers, including mentoring and collaboration among staff, has been shown to positively impacts teacher mobility (Ballou and Podgursky, 1998; Smith and Ingersoll, 2004).

Not surprisingly, higher teacher's salary has also shown to reduce teacher mobility (Murnane and Olsen, 1989; Feng, 2009, Stinebrickner, 1998).

Research has focused on the potential impacts of teacher mobility on student achievement. Teacher mobility was determined by Colquitt (2009) to be non-significant. A study by Ehrenberg et al (1991) study found no conclusive results.

In 1992, the New York City Board of Education found a weak, but negative correlation between teacher mobility and student achievement on the state standardized testing. The impact was greatest for grade three students ($r = -.27$). Guin (2007) conducted a case study of 5 elementary schools across one district. This study found a negative correlation between teacher mobility and student test scores in both math ($r = -.282$; $p < .001$) and reading ($n = 418$; $r = -.306$; $p < .001$). Keeler and McCall (1972) found mobility significantly impacts student achievement in the area of reading.

More recently, a Seton Hall doctoral study (Graziano, 2012) investigated the link between teacher characteristics and student achievement. Results indicated faculty mobility impacts student achievement to a statistically significant extent ($p<.001$), contributing to between .29 and 1.1 percent of the variance. Additionally, the variable of teacher mobility impacted student achievement in Math to a higher degree than English Language Arts (Graziano, 2012).

Three rationales related to methodological challenges have been set forth to explain the variance within empirical research on teacher related variables (Harris and Sass, 2012). The first challenge in methodology is related to student variables. According to Harris and Sass (2012), influences of peers and schools make it difficult to discern the variable of student achievement as a direct correlation of teacher-related variables. Secondly, when analyzing the

effects of teacher-related variables, it is difficult to obtain randomized samplings since students tend to be assigned to teachers based on observed teacher and student characteristics, meaning that at times, high performing teachers may inadvertently be assigned lower performing students. Lastly, unobserved teacher characteristics may contribute to uncontrolled variables such as the increased likelihood of teachers to attend informal training or have increased productivity.

Summary

An extensive body of research has identified family socio-economic status has the greatest impact on student achievement. Research has found that teacher-related variables have the second greatest influence on student learning. Teacher-related variables may be categorized as effectiveness (student learning), practice (teaching), credentials (education, experience, degrees, and certifications), and characteristics (age, gender, ethnicity, absenteeism, and mobility).

Research on teacher qualifications, including experience and level of education, has had mixed results. There is a small body of research indicating teacher qualifications are more impactful in the subject area of math as well as high school students' achievement.

Teacher characteristics, including mobility and absenteeism have also had mixed results. There are a handful of studies concluding there is no significant correlation between mobility and absenteeism and student achievement, while other studies conclude there to be a statistically significant correlation. Finally, a small amount of research on the topics of teacher mobility and absenteeism prove to be inconclusive.

Based on the review of literature regarding variables impacting student achievement the following teacher-related variables inclusive of the New Jersey School Report Card warrant further investigation and inclusion in this study:

1. Teacher experience
2. Teacher level of education
3. Teacher mobility
4. Teacher absenteeism

CHAPTER III: METHODOLOGY

Research Design

This study will use descriptive statistics to better understand the quality and characteristics of schools and teachers within New Jersey's Focus and Priority middle and high schools. The use of descriptive statistics is an essential component of quantitative data analysis and form the basis for any study seeking to better understand the qualities of a specific population (Gay, Mills and Airasian, 2009). The study design is descriptive of a specific population of schools and teachers deemed low-achieving. Data will be used from the three School Report Card years, 2008-2009, 2009-2010, and 2010-2011– the same data collection school years used by the NJDOE to classify a group of schools as Focus and Priority schools. Descriptive statistics will then be used to better understand the qualities within this teaching population.

Population

There are currently 2, 516 schools in New Jersey, of which 2005 are elementary schools and 511 are secondary schools. During the school years of 2008-09, 2009-10, and 2010-11 The New Jersey State Department of Education categorized at total of 370 schools as either a *Focus, Priority*, or *Reward* School. There are 75 Priority schools, 183 Focus Schools, and 112 Reward Schools (NJDOEa, 2013).

The population in this study is New Jersey Focus and Priority schools with any combination of grade spans ranging from six through twelve. There is a total of 73 middle and high schools identified as a New Jersey Focus and Priority school (NJ DOE, 2017). Four of

these schools are alternative high schools. New Jersey Alternative schools provide specialized programming to students whose needs are not able to be met through regular educational programming (NJDOE, Alternative Education, 2017). There is no New Jersey School Report Card data for alternative schools. Therefore, the population of this study will consist of 69 schools (N=69).

Focus and Priority schools are categorized based on 4 classification categories.

Table 1: Focus and Priority School Classification Categories

Focus School- Lowest Graduation Rates	high schools with a 2011 graduation rate lower than 75% (NJDOE, 2017)
Focus School- Largest Within School Gaps	schools with the largest in-school proficiency gap between the highest-performing subgroup and the combined proficiency of the two lowest-performing subgroups; Schools in this category have a proficiency gap between these subgroups of 43.5 percentage points or higher (NJDOE, 2017)
Focus School- Lowest Sub-group Performance	schools whose two lowest-performing subgroups rank among the lowest combined proficiency rates in the state; Schools in this category have an overall proficiency rate for these lowest-performing subgroups of 29.2% or lower (NJDOE, 2017)
Priority School	a school that has been identified as among the lowest-performing five percent of Title I schools in the state over the past three years, or any non-Title I school that would otherwise have met the same criteria (NJDOE, 2017)

The New Jersey School Report Card

The No Child Left Behind Act (NCLB) requires all school districts to provide specific demographic and student performance data annually to parents. Accordingly, NJDOE issued a report card for every public school in New Jersey beginning with the 1994-1995 school year through the 2011-2012 school year. The school report card provides data on school-level performance, as well as demographic information about staffing and students. This study will utilize data related to staffing from the 2008-2009, 2009-2010, and 2010-2011 school report cards.

Teacher-Related New Jersey School Report Card Variables

Table 2: Teacher-related Variables

Percent of Faculty Possessing a MA/MS	Percentage of faculty holding a master's level degree
Percent of Faculty Possessing a PhD/EdD	Percentage of faculty holding a doctoral level degree
Years of Experience	Average number of years teaching in public schools for all of a school districts' teaching staff
Faculty Attendance	Average percentage rates of attendance, including professional days, for all school faculty members during one school year
Faculty Mobility Rate	Average percentage of faculty members who leave the school district over the course of one school year

Data Collection

The data collected for this study was obtained from the New Jersey School Report Cards and a listing of New Jersey's Priority and Focus schools, both publicly available through the New Jersey Department of Education website. New Jersey School Report Card data for each middle and high school identified as a New Jersey Focus or Priority school was downloaded into Excel. This data included three years of report card data, 2008-2009, 2009-2010, and 2010-2011. These years were selected because they correlate with the three year data collection period utilized by the New Jersey Department of Education to classify the low-performing (Focus and Priority) schools. Data for any school not categorized as low-achieving (Focus or Priority schools) was removed from the spreadsheet. School, student, and teacher-level variables not related to this study were deleted. The New Jersey Report Card data provided the District Factor Group (DFG) rating, grade level configuration, and reason for classification as a low achieving (Focus or Priority school). Descriptive data was obtained regarding the teaching staff from the four teacher-related categories: teacher level of education, teacher years of experience, staff attendance, and staff mobility thereby providing data on each teacher-related variable targeted in this study.

Research Questions

1. What are the descriptive characteristics of low-achieving middle and high schools?
2. What are the characteristics of teachers within low-achieving middle and high schools?
3. What combination of school and teacher-related variables best distinguishes Priority and Focus schools?

Data Analysis

In order to better understand the schools and teaching population of a population of low-achieving middle and high schools, descriptive statistics were used to analyze school characteristics and teacher-related data from the New Jersey School Report Card. District Factor Group (DFG) rating, school type, grade-level configuration, and reason for classification as low-achieving was compiled into charts to give an understanding of the characteristics of this population of schools deemed low-achieving. Next, the teacher population was described by analyzing the teacher-related variables of level of educational, professional experience, mobility rate, and attendance within the population. Measures of central tendency, mean, median, and mode, were calculated using Excel software. Finally, a discriminant analysis was conducted to determine a combination of variables that best distinguished Priority and Focus school categorization.

Summary

This study will employ the use of descriptive statistics to better understand the type of schools that make up a population of low-achieving schools. Data will be collected from the New Jersey School Report Cards during the school years 2008-2009, 2009-2010 and 2010-2011 – the same years used to classify groups of New Jersey's schools as Focus and Priority schools. Descriptive statistics will be used to analyze the teaching population of a group of low-performing schools. Lastly, a discriminant analysis will be conducted in order to determine a combination of variables that best distinguishes among Priority and Focus school categories.

Chapter 4: Findings

Since the findings of *The Coleman Report* (1966) highlighted a disparity in achievement among the nation's schools, research and policy has sought to mediate the achievement gap, striving for the goal of equality in education for all students. This study describes the characteristics of a population of schools and teachers categorized as low-achieving. Understanding these qualities allows future researchers to further investigate correlations among variables ultimately influencing educational policies.

It has been well-established socio-economic status is the greatest predictor of student achievement (Coleman, 1966; NAEP, 2008; National Center for Education Statistics, 2007; OECD, 2006). According to Sanders (1998), teachers have the second greatest influence on student performance. The New Jersey Focus and Reward schools provide a proxy for us to further explore characteristics of schools and teachers deemed underachieving. Understanding this population will contribute to the current body of research on school demographics and teacher-related variables that potentially correlate to low-achievement. Because this study is descriptive, the purpose is to gain understanding of characteristics. The study is guided by three main research questions:

1. What are the descriptive characteristics of low-achieving middle and high schools?
2. What are the characteristics of teachers within low-achieving middle and high schools?
3. What combination of school and teacher-related variables best distinguishes among Priority and Focus schools?

Description of the Population

This study examined the characteristics of a group of low-achieving schools in New Jersey using descriptive statistics collected from the New Jersey School Report Card (N=69). There are 47 Focus Schools (68.12%) and 22 Priority schools (31.88%). All of the schools are public schools. None of the schools are schools for special education or charter schools. Two of the schools (2.90%) are vocational high schools. Each Focus and Priority school was classified based on one of four causes or categories (see Table 1):

1. lowest graduation rates;
2. largest within school proficiency gap between subgroups;
3. low sub-group performance;
4. lowest overall performance of Title I (economically disadvantaged) schools.

Table 3: Low-achievement Classification Categories

Focus School- Lowest Graduation Rates	high schools with a 2011 graduation rate lower than 75% (NJDOE, 2017)
Focus School- Largest Within School Gaps	schools with the largest in-school proficiency gap between the highest-performing subgroup and the combined proficiency of the two lowest-performing subgroups; Schools in this category have a proficiency gap between these subgroups of 43.5 percentage points or higher (NJDOE, 2017).
Focus School- Lowest Sub-group Performance	schools whose two lowest-performing subgroups rank among the lowest combined proficiency rates in the state; Schools in this category have an overall proficiency rate for these lowest-performing subgroups of 29.2% or lower (NJDOE, 2017).
Priority School	a school that has been identified as among the lowest-performing five percent of Title I schools in the state over the past three years, or any non-Title I school that would otherwise have met the same criteria (NJDOE, 2017)

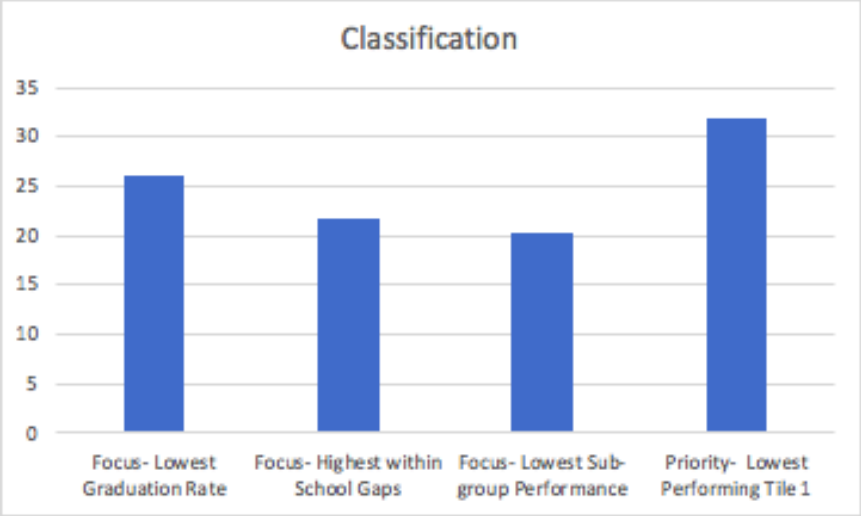
Of the 47 Focus schools, 18 of the schools (26.08%) were classified based on lowest graduation rate, 15 schools (21.74%) were classified based on highest within school gaps, and 14 of the schools (20.29%) were categorized due to lowest sub-group performance (see Table 2). All 22 Priority schools (31.88%) are Title I (economically disadvantaged) schools classified based on lowest graduation rate and/or lowest overall academic performance within the Title I school population (see Table 2).

The largest group, nearly one third of schools, within the sub-group categories is the Priority school classification. These results are not surprising given that Priority schools must be previously categorized as Title I schools, or schools deemed "poor" by the New Jersey Department of Education. Research has consistently proven economically-disadvantaged children have lower achievement rates (McKenzie et al, 2005; National Assessment for Education Progress, 2008; OECD, 2007). It is important to note, that a majority, nearly half, of the remaining schools fall into the lowest two tiers of New Jersey's District Factor Group rankings as will be discussed later. The findings that this low-achieving population of schools are predominately economically disadvantaged is consistent with the research (Malone, 2002; McKenzie et al, 2005; Mitchel, 2004; National Assessment for Education Progress, 2008; OECD, 2007).

Table 4: Priority and Focus School Reason for Classification

Category	f	% population
Focus- Lowest Graduation Rate	18	26.08%
Focus- Highest within School Gaps	15	21.74%
Focus- Lowest Sub-group Performance	14	20.29%
Priority- Lowest Performing Title I	22	31.88%

Graph 1: Priority and Focus School Reason for Classification



Grade Span

This study analyzed middle and high schools with a grade span range of six through twelve. High school is the largest grade span configuration represented within this study with 31 of the schools (44.93%) having a grade span range of 9-12 (see Table 3). Middle school represented the second largest configuration with 29 of the schools (42.02%) having a grade span range of 6-8 Additionally, five schools (7.25%) consisted of grades 7 and 8, two schools

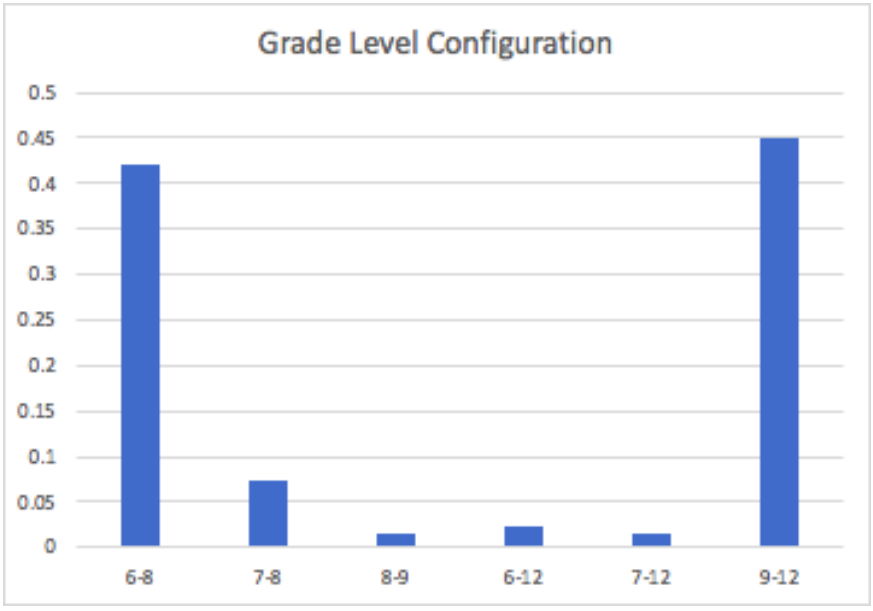
(2.30%) consisted of grades 6-12, one school (1.45%) consisted of grades 8 and 9, and one school (1.45%) contained grades 7 through 12 (see Table 3).

The grade span was narrowed by the researcher to middle and high school based on research indicating teacher-related variables have a more significant impact on student performance at the middle and high school level (Wayne and Youngs, 2003). Therefore, one would not expect to see a great variation among the grade level configurations, as is the case in these results. The grade-level span is presented to give a more detailed picture of the population, and is not intended for purposes of analysis.

Table 5: Grade Span Configuration

Grade Level Span	f	% population
6-8	29	42.02%
7-8	5	7.25%
8-9	1	1.45%
6-12	2	2.30%
7-12	1	1.45%
9-12	31	44.93%

Graph 2: Grade Span Configuration



Socio-Economic Status

In 2010, each of New Jersey's schools received a District Factor Group (DFG) rating. District Factor Grouping rankings categorize schools based on seven variables of a town's population: attainment of high school diploma, attendance of college, occupation, income, unemployment, poverty status, and population density (Bao et al, 2006). Combined, these variables give a relative depiction of a town's socio-economic status. Based on the criteria, each town received a rating of A through J with A indicating the highest level of correlation to variables negatively impacting student achievement (Bao et al, 2010). Since DFG rankings have not been updated by the New Jersey Department of Education since 2010, the 2010 DFG ratings provide the most recent scale of comparison for the combined student-related variables of family income and educational level. Notably, the percentage of schools within each category generally descend as the DFG rankings ascend (see Table 4). The majority of the

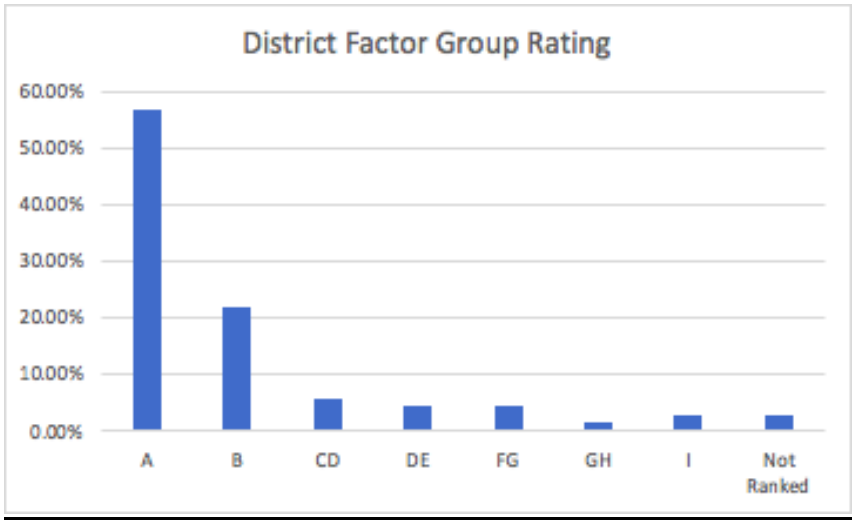
schools in this study, 29 (56.52%) have the lowest DFG ranking of A, and 15 schools (21.74%) have the second lowest DFG ranking of B (see Table 4). Additionally, four schools (5.80%) were ranked CD, three schools (4.35%) were ranked DE, three schools (4.35%) were ranked FG, one school (1.45%) was ranked GH, and two schools (2.90%) have the highest DFG ranking of I (see Table 4). Two schools (2.90%) within the study did not receive a District Factor Group ranking (see Table 4).

The prevalence of low District Factor Group Rankings among the Focus and Priority schools is supported by empirical literature declaring low-socio economic status has the greatest influence on student achievement (Coleman, 1966; NAEP, 2008; National Center for Education Statistics, 2007; OECD, 2006). More specific to this particular study, is the correlation of lower DFG rating to the poorer student performance on the New Jersey Assessment of Skills and Knowledge (NJ ASK) – the assessments used, in part, to categorize schools as low-achieving (Focus and Priority) schools. The research of Malone (2002) and Mitchel (2004) concluded DFG is the strongest predictor of success on the NJ ASK. McKenzie et al (2005) found students receiving free and reduced lunch, a statistic comparable to that within the DFG ranking, consistently negatively impacted student performance and the NJ ASK. Turnamian (2012) used student-related socio-economic variables to predict, within 10 points, student performance on the NJ ASK for 228 New Jersey school districts out of 438 schools and 262 out of 439 schools. The descriptive findings of the schools in this study align to the preponderance of research concluding economic and other socio-economic variables have a significant impact on student achievement.

Table 4: District Factor Group Rankings

DFG	f	% population
A	39	56.52%
B	15	21.74%
CD	4	5.80%
DE	3	4.35%
FG	3	4.35%
GH	1	1.45%
I	2	2.90%
Not Ranked	2	2.90%

Graph 3: District Factor Group Rankings



Description of the Teaching Population

It has been well-established student achievement is significantly impacted by socio-economic variables descriptive of the population served within each school (Malone, 2002; McKenzie et al, 2005; Mitchel, 2004; National Assessment for Education Progress, 2008; OECD, 2007). Therefore, the description of the schools in response to research question 1 of this study, which indicate the majority of schools have the lowest DFG rankings and are Title I (poor), is not a surprising finding. Therefore, the second purpose of this study went beyond school and student-related variables to gain perspective of the teaching populations within these schools. This purpose is two-fold. First, since teachers greatly impact student performance (Stedman, 1997; Darling-Hammond, 2000; Jordan et al, 1997; Mendro, 1998; Sanders and Rivers, 1996), understanding teacher-related variables of low-performing schools provides us with critical descriptive statistics to form the basis of future correlational studies. Furthermore, research indicates economically-disadvantaged schools tend to employ less qualified teachers and conversely, high-achieving schools tend to attract and retain more qualified teachers (Darling-Hammond, 2009; Recruiting New Teachers, 2000). Descriptive statistics of teachers within a group of low-performing schools may serve as a foundation for future comparative studies.

This study utilized teacher-related variables from the New Jersey School Report Card with a demonstrated impact on student academic achievement. Goe (2007) categorized these variables into two categories: teaching credentials and teacher characteristics (see Table 5).

Table 5: Teacher-Related Variables

Teacher Credentials	Teacher Characteristics
Years of Experience	Faculty Attendance Rate
Percent of Faculty Possessing a MA/MS	Percent of Faculty who entered or left the school during the school year (mobility)
Percent of Faculty Possessing a PhD/EdD	

Years of Experience

Faculty years of experience is the faculty's average number of years teaching in a public school. The average number of years of experience for the total school population (N=69) in this study is 10.44 years with a standard deviation of 2.29. The median number of years is 10 years, and the mode is 10 years (see Table 6).

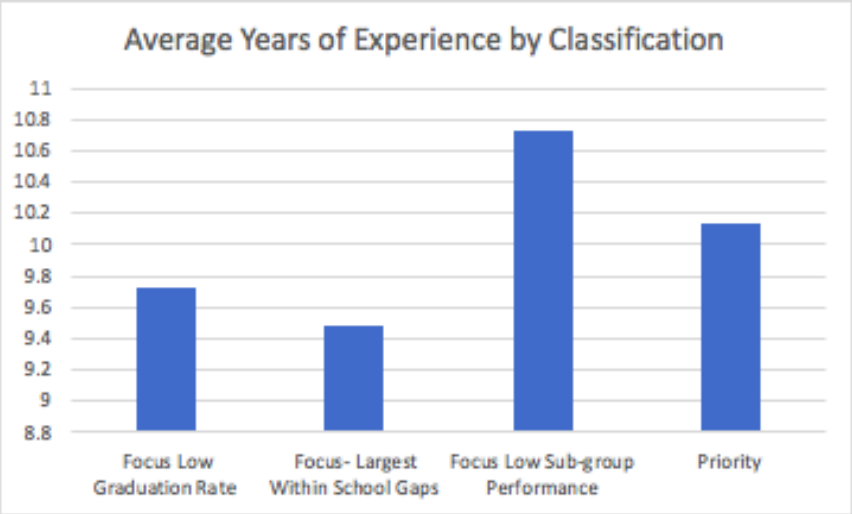
Faculty members within schools categorized as Focus schools with low graduation rates (N= 18) have a mean of 9.72 years of experience, a median of 10 years and a mode of 10 years of experience (see Table 6). Faculty members within schools categorized as Focus schools with Largest Within School Gaps (N=15) have a mean of 9.47 years of experience, a median of 9 years and a mode of 9 years of experience (see Table 6). Faculty members within schools categorized as Focus schools with low sub-group performance (N=14) have a mean of 10.73 years of experience, a median of 11 years and a mode of 11 years of experience (see Table 6). Faculty members within schools categorized as Priority schools (N=22) have a mean of 10.12 years of experience, a median of 10 years and a mode of 13 years of experience (see Table 6). Focus schools classified by Low Sub-group Performance had the highest average number of years of experience (see Graph 3). The faculty members of Focus schools classified by Within School Gaps had the lowest average number of years of experience in a public school (see Graph 3).

Research indicates there is a positive correlation between teacher experience and student achievement (Akiba et al, 2007; Boyd et al, 2008; Darling-Hammond, 2009). The average years of teaching experience for the schools in this study is 10.44 years. This is comparatively lower than a calculated state average of 17.43 years (SD 3.26) for all teachers in New Jersey's schools from the New Jersey School Report Card data from years 2008-2011. The results of this study align with the research indicating that teacher experience has a positive correlation to student achievement.

Table 6: Faculty Years of Experience

	Mean	Median	Mode
All Focus and Priority Schools	10.44	10	10
Focus Low Graduation Rate	9.72	10	10
Focus- Largest Within School Gaps	9.47	9	9
Focus Low Sub-group Performance	10.73	11	11
Priority	10.12	10	13

Graph 4: Faculty Years of Experience



Educational Level

The educational level of the faculty is calculated by computing the average percentage of faculty members within each school district holding an advanced degree. The mean for percentage of faculty members holding masters degree is 43.37 (see Table 7) with a standard deviation of 10.02. The median percentage of faculty members holding a masters degree is 41.5% and the mode is 50% (see Table 7).

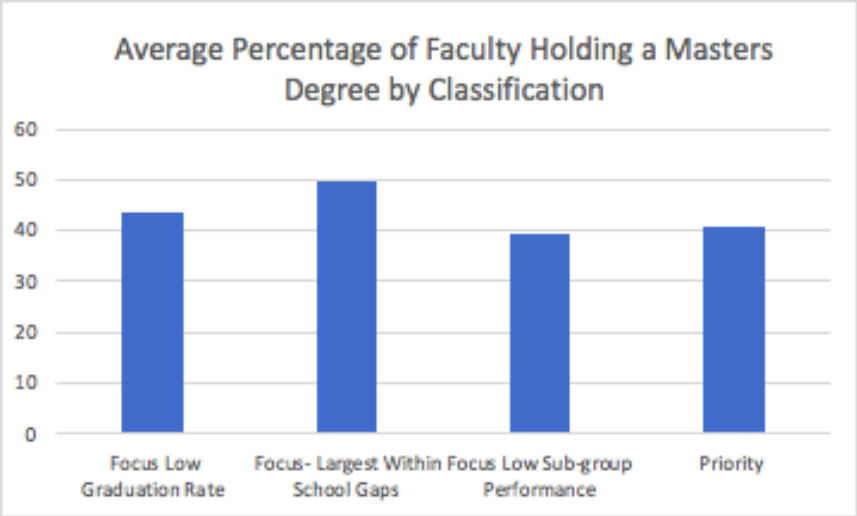
Faculty members within schools categorized as Focus schools with low graduation rates (N= 18) have a mean of 43.41%, a median of 39.2%, and a mode of 39.4% of faculty members holding a masters degree (see Table 7). Faculty members within schools categorized as Focus schools with Largest Within School Gaps (N=15) have a mean of 49.62%, a median of 48.5%, and a mode of 66.7% of faculty members holding a masters degree (see Table 7). Faculty members within schools categorized as Focus schools with low sub-group performance have a mean of 39.3%, a median of 37.9%, and a mode of 50% of faculty members holding a masters degree (see Table 7). Faculty members within schools categorized as Priority schools

(N=22) have a mean of 40.59%, a median of 40.5%, and a mode of 50% of faculty members holding a masters degree (see Table 7). Focus schools classified by Largest Within School Gaps had the highest average number of teachers holding a Master's degree (see Graph 4). Focus schools with Low Sub-group Performance had the lowest average number of teachers holding a Master's degree (see Graph 4).

Table 7: Educational Level- Percentage of Faculty Holding a Masters degree

	Mean	Median	Mode
All Focus and Priority Schools	43.37%	41.5%	50%
Focus Low Graduation Rate	43.41%	39.2%	39.4%
Focus- Largest Within School Gaps	49.62%	48.5%	66.7%
Focus Low Sub-group Performance	39.3%	37.9%	50%
Priority	40.5%	40.5%	40.5%

Graph 5: Educational Level- Percentage of Faculty Holding a Masters degree



The mean percentage of faculty members holding a doctorate is 2.49% (see Table 8) with a standard deviation of 3.40. The median percentage of faculty members holding a doctorate 1.4% and the mode is 0% (see Table 8).

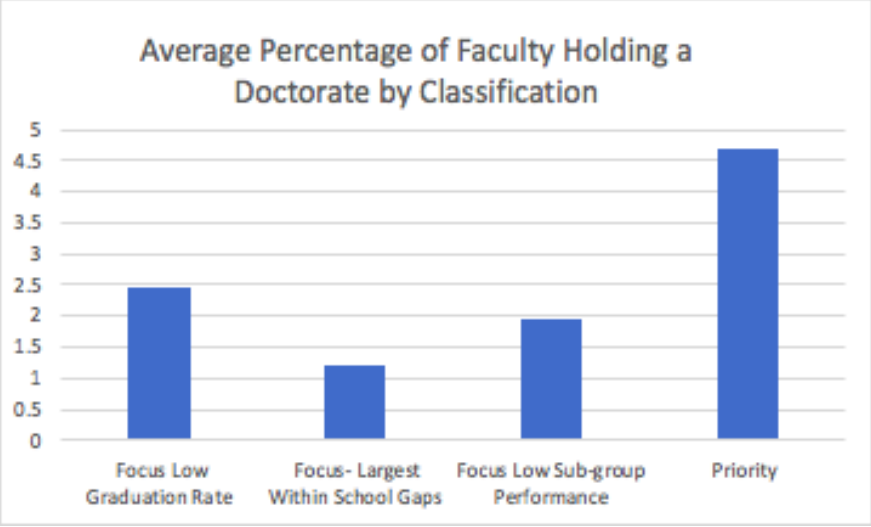
Faculty members within schools categorized as Focus schools with low graduation rates (N= 18) have a mean of 2.46%, a median of 3.4%, and a mode of 0% of faculty members holding a doctorate (see Table 8). Faculty members within schools categorized as Focus schools with Largest Within School Gaps (N=15) have a mean of 1.2%, a median of 0%, and a mode of 0% of faculty members holding a doctorate (see Table 8). Faculty members within schools categorized as Focus schools with Low Sub-group Performance (N=14) have a mean of 1.93%, a median of 1%, and a mode of 0% of faculty members holding a doctorate (see Table 8). Faculty members within schools categorized as Priority schools (N=22) have a mean of 4.7%, a median of 2.4%, and a mode of 0% of faculty members holding a doctorate (see Table 8). Priority schools had the highest average percentage of faculty members holding a

doctorate (see Graph 5). Focus schools with Largest Within School Gaps had the lowest average percentage faculty members holding a doctorate (see Graph 6).

Table 8: Educational Level- Percentage of Faculty Holding a Doctorate

	Mean	Median	Mode
All Focus and Priority Schools	2.49%	1.4%	0%
Focus Low Graduation Rate	2.46%	3.4%	0%
Focus- Largest Within School Gaps	1.20%	0%	0%
Focus Low Sub-group Performance	1.93%	1%	0%
Priority	4.7%	2.4%	0%

Graph 6: Educational Level- Percentage of Faculty Holding a Doctorate



The teacher's level of education's impact on student achievement has been widely debated in the educational research, commonly known in the empirical literature as the Hanushek (1989, 1997) and Henge (1989) debate. Hanushek's (1989, 1997) meta-analysis concludes teacher's level of education has no statistically significant impact on student achievement. However, several researchers conclude the opposite. Hedge et al (1994), Greenwald et al (1996), Wayne and Youngs (2003), all found teacher's level of education has a statistically significant positive correlation to student achievement. In this study, an average of 2.49% of faculty hold a doctorate, in comparison to state averages of 1.12% with a standard deviation of 2.544 (Gemellaro, 2012). An average of 43.37% of faculty hold a Master's degree, in comparison to the state average of 40.18% with a standard deviation of 15.345 (Gemellaro, 2012). The results of this study show a greater percentage of teachers hold an advanced degree in comparison with state averages, suggesting advanced degrees may not correlate with lower student achievement.

Teacher Attendance

Faculty attendance is representative of the total average number of days in attendance, including professional days, for all school faculty members during one school year. The number of instructional days required by the New Jersey Department of Education is 180 days. Most school districts include an additional 3-5 professional school days in the yearly calendar. This is negotiated by each individual district's teacher's union. The average attendance rate for the total school population (N=69) in this study is 92.85 days with a standard deviation of 2.40. The median number of days is 94.7 and the mode is 96.2 (see Table 9). The average attendance rate for the total school population (N=69) in this study is 92.85 days. The median number of days is 94.7 and the mode is 96.2 days (see Table 9).

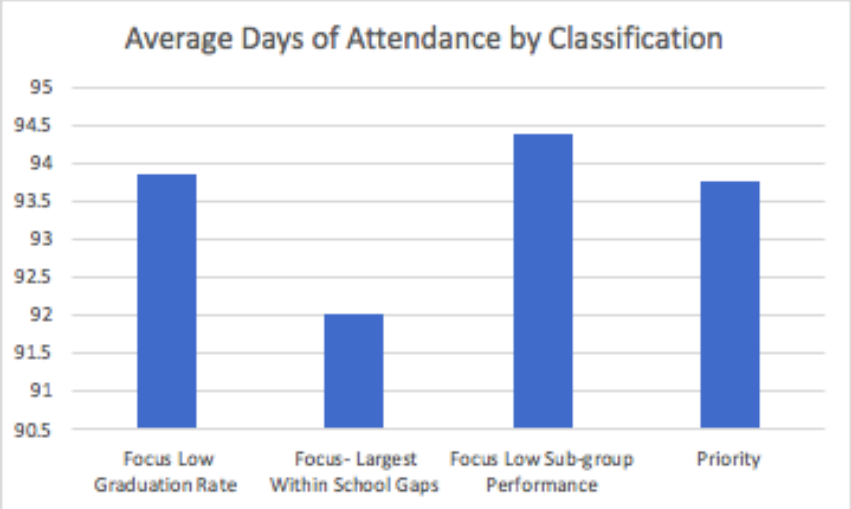
Faculty members within schools categorized as Focus schools with Low Graduation Rates (N=18) have a mean of 93.85 days, a median of 94.7 days, and a mode of 96.2 days (see Table 9). Faculty members within schools categorized as Focus schools with Largest Within School Gaps (N=15) have a mean of 96.2 days, a median of 95 days, and a mode of 94.7 days (see table 9). Faculty members within schools categorized as Focus schools with Low Sub-group Performance (N=14) have a mean of 94.38 days, a median of 94.9 days, and a mode of 94 days (see Table 9). Faculty members within schools categorized as Priority schools (N=22) have a mean of 93.85 days, a median of 94.45 days, and a mode of 94.5 days (see Table 9). Focus schools classified by Lowest Subgroup Performance had the highest average of faculty number of days of attendance in the school year (see Graph 6). Focus schools with Largest Within School Gaps had the lowest average of faculty number of days of attendance in the school year (see Graph 6).

The research on teacher attendance is mixed. There is a significant body of research concluding teacher and faculty absenteeism have a statistically significant negative impact on student achievement (Bayard's, 2003; Boswell, 1993; Clotfelter, Ladd, & Vigdor, 2009; Kirk, 1998; Manlove and Elliot, 1977; Miller, Murnane, & Willett, 2007; Tingle, 2012; Woods & Montagno, 1997). The research of Webb (1995) found absenteeism has a positive but weak (non-significant) impact on student achievement. Cay's (2007) study concluded absenteeism did not impact student achievement to a statistically significant degree. In this study, the mean faculty attendance (92.85 days) in low performing school is below an identified state mean of 95.40 days with a standard deviation of 9.106 (Gemellaro, 2012). This shows some indication that faculty attendance within this population of low-performing schools may influence student achievement.

Table 9: Faculty Attendance

	Mean	Median	Mode
All Focus and Priority Schools	92.85	94.7	96.2
Focus Low Graduation Rate	93.85	94.45	94.8
Focus- Largest Within School Gaps	92	95	94.7
Focus Low Sub-group Performance	94.38	94.9	94
Priority	93.76	94.4	94.5

Graph 7: Faculty Attendance



Mobility

Faculty mobility is indicative of the percentage of faculty members who leave the school district over the course of one school year. The average percentage of faculty members

per school who left the school district during a school year in this study is 6.03% faculty members (see Table 10) with a standard deviation of 6.9. The median percentage of faculty members is 3.5% and the mode is 0% (see Table 10).

Faculty members within schools categorized as Focus schools with Low Graduation Rates (N=18) have a mean of 5.2% faculty mobility in one school year, a median of 3.05%, and a mode of 0% of faculty members leaving the school over the course of a school year. Faculty members within schools categorized as Focus schools with Largest Within School Gaps (N=15) have a mean mobility rate of 4.94%, a median of 3.5%, and a mode of 0% (see Table 10). Faculty members within schools categorized as Focus schools with Low Sub-group Performance (N=14) have a mean mobility rate of 3.95%, a median of 1.9%, and a mode of 0% (see Table 10). Faculty members within schools categorized as Priority schools (N=22) have a mean mobility rate of 9.06%, a median of 7.3%, and a mode of 0% (see Table 10). Focus schools classified as Priority schools had the highest average number of teachers leaving the school over the duration of one school year (see Graph 7). Focus schools classified as Focus schools with the Lowest Sub-group Performance had the highest average number of teachers leaving the school over the duration of one school year (see Graph 7).

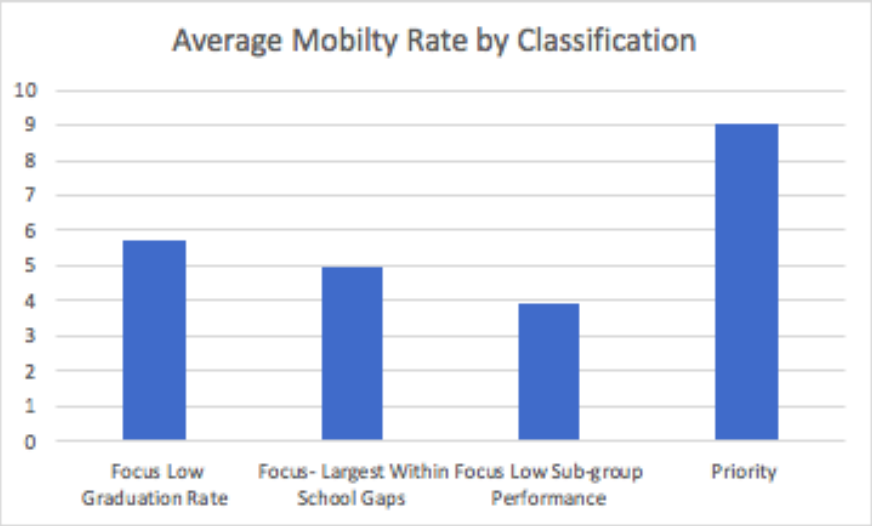
Research on faculty mobility shows two important links to student performance. The first is the link between student-related variables and teacher mobility. Studies show there is an increase in teacher mobility in schools serving low socio-economic populations (Feng 2009, 2010; Haycock, 1998). Second, studies have investigated the link between teacher mobility and student performance and again, found mixed results. Colquitt (2009) found teacher mobility's effect on student achievement to be non-significant. Ehrenberg et al's (1991) study found no conclusive results. However, there is a body of research concluding teacher mobility

does, in fact, impact student achievement (Graziano, 2012; Guin, 2007; New York City Board of Education, 1992). The average mobility rate for the total population in this study is 6.03% of teachers leaving the school over the course of a school year. In comparison, this is higher than an identified mean mobility rate for New Jersey of 4.31% with a standard deviation of 6.29 (Gemellaro, 2012). This aligns to the research that mobility may be greater in low-achieving schools and also suggests that mobility may impact student achievement. Most poignant is the even greater average mobility rate, 9.06% of teachers, for the Priority schools, since the population of Priority schools are 100% economically disadvantaged students.

Table 10 : Faculty Mobility

	Mean	Median	Mode
All Focus and Priority Schools	6.03%	3.5%	0%
Focus Low Graduation Rate	5.72%	3.05%	0%
Focus- Largest Within School Gaps	4.94%	3.5%	0%
Focus Low Sub-group Performance	3.95%	1.9%	0%
Priority	9.06%	7.3%	0%

Graph 8: Faculty Mobility



Distinguishing Variables Among Focus and Priority School Categories

To further understand the characteristics among the schools classified as Focus and Priority schools a discriminant analysis was conducted to determine if a combination of variables could distinguish categorization among the four groupings of Focus and Priority schools. This provides a better understanding of the school and teacher characteristics within the low-achieving schools. Within the four categories, Focus Between Sub Group Gaps, Focus Low Graduation Rates, Focus Low Performing, and Priority schools a variance among the means of each independent variable revealed notable differences in the school level variables of student faculty ratio and high school grade configuration and the teacher-related variables of attendance, mobility experience, and level of education (see Table 11). This predicts that each variable may be significant in impacting school classification as one of the four categories of low-achieving schools.

Table 11: Focus and Priority Schools within School Variables Table of Group Means

VAR00001		Mean	Std. Deviation	Valid N (listwise) Unweighted	Valid N (listwise) Weighted
Gap focus	DFG	4.000000000000000	1.794299917829222	42	42.000
	SFRATIO	10.426190476190480	2.070708553624427	42	42.000
	MAMS	48.716666666666670	10.337663005861830	42	42.000
	FATTEND	95.059523809523800	2.033267168246856	42	42.000
	SARATIO	274.266666666666540	110.869643663984650	42	42.000
	PHDEDD	1.247619047619048	2.186570774929245	42	42.000
	MOBILITY	4.309523809523808	4.875814354686867	42	42.000
	Experience	9.476190476190476	1.837788905286700	42	42.000
	High School	.214285714285714	.415299732236633	42	42.000
Graduation focus	DFG	1.673469387755102	1.214285714285714	49	49.000
	SFRATIO	9.473469387755104	2.035904335322509	49	49.000
	MAMS	43.412244897959190	11.802394401367959	49	49.000
	FATTEND	93.881632653061200	2.308288820514941	49	49.000
	SARATIO	235.244897959183670	212.409532763582750	49	49.000
	PHDEDD	2.465306122448981	2.701045401044454	49	49.000
	MOBILITY	5.794897959183675	6.227177036469846	49	49.000
	Experience	9.734693877551020	1.668026656013045	49	49.000

	High School	1.000000000000000	.000000000000000	49	49.000
low performing focus	DFG	1.090909090909091	.294244943168250	22	22.000
	SFRATIO	8.513636363636364	2.607004384628432	22	22.000
	MAMS	41.400000000000006	9.594591730563135	22	22.000
	FATTEND	94.140909090909090	1.993001825653320	22	22.000
	SARATIO	154.763636363636380	50.150417037192476	22	22.000
	PHDEDD	2.409090909090909	2.422692144998459	22	22.000
	MOBILITY	7.609090909090909	7.722996524968486	22	22.000
	Experience	12.954545454545455	1.889249604807176	22	22.000
	High School	.500000000000000	.511766315719159	22	22.000
priority	DFG	1.538461538461539	.853665589836708	39	39.000
	SFRATIO	9.269230769230770	2.367449643343063	39	39.000
	MAMS	40.592307692307690	9.036778204862989	39	39.000
	FATTEND	93.764102564102560	2.716372114215265	39	39.000
	SARATIO	173.920512820512840	88.495165432882540	39	39.000
	PHDEDD	4.700000000000001	5.247305072731695	39	39.000
	MOBILITY	9.064102564102566	8.834665191269861	39	39.000
	Experience	10.128205128205128	2.202623880015630	39	39.000
	High School	.769230769230769	.426832794918354	39	39.000

Total	DFG	2.197368421052631	1.679796083825229	152	152.000
	SFRATIO	9.545394736842107	2.286871219723841	152	152.000
	MAMS	43.863157894736844	10.812745019758900	152	152.000

Results from the discriminant analysis indicated a discriminant function that significantly distinguishes between the four school groupings. The percentage of cases that were correctly classified was 71.9%. The squared eigenvalue of 1.609 for function 1 (see Table 12) yields a strong effect size of .616 indicating the combination of variables in function 1 result in a statistically significant difference among Focus and Priority school categorizations. The combination of variables for function 1 accounted for 64.7% of the variance (see Table 12). The test of functions 1 through 3 indicates the predictor variables significantly discriminate (p=.000) between the school groupings (see Table 13). The most impactful variables within the combination of variables are DFG (.655), teacher attainment of a master's degree (.463), teacher experience (-.304), and high school grade level configuration (-.545) (see Table 14). Among discriminating variables the strongest correlation of independent variables to standardized function 1 are District Factor Grouping (coefficient = .716) and schools not inclusive of high school (coefficient = -.573) (see Table 15).

Table 12: Summary of Canonical Discriminant Functions

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.609[a]	64.7	64.7	.785
2	.645[a]	25.9	90.6	.626
3	.234[a]	9.4	100.0	.435

Table 13: Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.189	240.808	27	.000
2 through 3	.493	102.243	16	.000
3	.811	30.327	7	.000

Table 14: Standardized Canonical Discriminant Function Coefficients

	Function		
	1	2	3
DFG	.655	.180	.159
SFRATIO	.204	.282	.036
MAMS	.463	.069	.129
FATTEND	.121	-.163	-.032
SARATIO	.069	.212	.239
PHDEDD	.153	.214	-.897
MOBILITY	.022	-.168	-.504
Experience	-.304	-.715	.583
High School	-.545	.636	.531

Table 15: Structure Matrix

	Function		
	1	2	3
DFG	.716*	.104	.121
SFRATIO	.203*	.150	.021
FATTEND	.176*	-.068	.100
Experience	-.232	-.663*	.151
High School	-.573	.608*	.138
PHDEDD	-.192	.054	-.599*
MOBILITY	-.150	-.072	-.374*
SARATIO	.195	.192	.279*
MAMS	.227	.043	.230*

The linear combination of the predictors resulted in a correct classification for 84.4% of the Focus Schools with Between Sub Group Gaps, 13.3% of the Focus Schools with Low-Graduation Rates, 2.2 % of the Priority schools and none of the Low-Performing Focus Schools (see Table 16).

Table 16: Classification Results

		Predicted Group Membership			
VAR00001	Gap focus	Graduation focus	low performing focus	priority	Total
Gap focus	38	6	0	1	45
Graduation focus	3	33	3	11	50
Low performing focus	0	1	22	3	26
Priority	1	11	5	22	39
Ungrouped cases	5	3	20	18	46
Gap focus	84.4	13.3	.0	2.2	100.0
Graduation focus	6.0	66.0	6.0	22.0	100.0
Low performing focus	.0	3.8	84.6	11.5	100.0
Priority	2.6	28.2	12.8	56.4	100.0
Ungrouped cases	10.9	6.5	43.5	39.1	100.0

a. 71.9% of original grouped cases correctly classified.

The test of contrasts within the discriminant analysis further reveals which specific variables impact classification among the low-achievement school classifications. These predictors were significant predictors for each school in comparison to all three other school classification categories.

As evidenced by Table 17, percentage of faculty with Master's degrees was a significant predictor for classification as Between Sub Group Gap Schools. For schools classified as Priority Schools, percentage of teachers with a doctorate was found to be a significant predictor (See Table 17). This association may be misleading since Priority school classification included schools that high schools and there is a greater probability of high

school teachers having advanced degrees due to the nature of specialized content. Finally, teacher experience was found to be a significant predictor for schools classified as Low Performing Schools (See table 17).

Table 17: Test of Contrasts- Variables Among School Categorizations

Dependent Variable	(I) VAR00001	(J) VAR00001	Mean Difference (I-J)	Std. Error	Sig.
FATTEND	Gap focus	Graduation focus	1.23	0.49	0.01
		low performing focus	0.95	0.62	0.13
		priority	1.32	0.52	0.01
	Graduation focus	Gap focus	-1.23	0.49	0.01
		low performing focus	-0.29	0.61	0.64
		priority	0.09	0.51	0.86
	low performing focus	Gap focus	-0.95	0.62	0.13
		Graduation focus	0.29	0.61	0.64
		priority	0.38	0.63	0.55
	priority	Gap focus	-1.32	0.52	0.01
		Graduation focus	-0.09	0.51	0.86
		low performing focus	-0.38	0.63	0.55
PHDEDD	Gap focus	Graduation focus	-1.27	0.66	0.06
		low performing focus	-1.11	0.80	0.17
		priority	6.91	0.70	0.00
		Gap focus	1.27	0.66	0.06

	Graduation focus	low performing focus	0.16	0.79	0.84
		priority	-2.23	0.69	0.00
	low performing focus	Gap focus	1.11	0.80	0.17
		Graduation focus	-0.16	0.79	0.84
		priority	-2.39	0.82	0.00
	priority	Gap focus	3.50	0.70	0.00
		Graduation focus	2.23	0.69	0.00
		low performing focus	2.39	0.82	0.00
		subgroup focus	2.76	0.72	0.00
MAMS	Gap focus	Graduation focus	6.20	2.14	0.00
		low performing focus	7.34	2.59	0.01
		priority	9.02	2.27	0.00
	Graduation focus	Gap focus	-6.20	2.14	0.00
		low performing focus	1.14	2.55	0.65
		priority	2.82	2.22	0.21
	low performing focus	Gap focus	-7.34	2.59	0.01
		Graduation focus	-1.14	2.55	0.65
		priority	1.68	2.66	0.53
	priority	Gap focus	-9.02	2.27	0.00
		Graduation focus	-2.82	2.22	0.21
		low performing focus	-1.68	2.66	0.53
		subgroup focus	1.29	2.32	0.58
MOBILITY	Gap focus	Graduation focus	-0.79	1.39	0.57

		low performing focus	-1.75	1.68	0.30
		priority	-4.11	1.48	0.01
	Graduation focus	Gap focus	0.79	1.39	0.57
		low performing focus	-0.96	1.65	0.56
		priority	-3.32	1.44	0.02
	low performing focus	Gap focus	1.75	1.68	0.30
		Graduation focus	0.96	1.65	0.56
		priority	-2.37	1.73	0.17
	priority	Gap focus	4.11	1.48	0.01
		Graduation focus	3.32	1.44	0.02
		low performing focus	2.37	1.73	0.17
		subgroup focus	5.11	1.51	0.00
Experience	Gap focus	Graduation focus	-0.24	0.39	0.53
		low performing focus	-3.94	0.47	0.00
		priority	-0.65	0.42	0.12
	Graduation focus	Gap focus	0.24	0.39	0.53
		low performing focus	-3.70	0.45	0.00
		priority	-0.41	0.40	0.31
	low performing focus	Gap focus	3.94	0.47	0.00
		Graduation focus	3.70	0.45	0.00
		priority	3.29	0.47	0.00
	priority	Gap focus	0.65	0.42	0.12
		Graduation focus	0.41	0.40	0.31
		low performing focus	-3.29	0.47	0.00

*. The mean difference is significant at the 0.05 level.

Summary

In chapter 4, a descriptive analysis is provided to gain understanding of characteristics within a low-achieving population of schools. A discriminant analysis provided further understanding of the characteristics among the schools classified as Focus and Priority schools. The discriminant analysis determined a combination of school and teacher-related variables that distinguished categorization among the four groupings of Focus and Priority schools. In totality, this analysis provides a better understanding of the school and teacher characteristics within the study's population of low-achieving schools.

Data from the New Jersey School Report Cards 2008-2009, 2009-2010, and 2010-2011 was used to give insights regarding attributes and qualities of the school and teaching populations. The 69 middle and high schools in the study were all public schools, with 97.8% of the schools being regular, general education schools, and the remaining are vocational schools.

The school grade range is 6-12 with various configurations of grade levels. The majority of schools (44.93%) are high schools (grades 9-12) followed closely by middle schools (42.02%). Since the grade-level span was narrowed by the researcher to middle and high school based on research indicating teacher-related variables have a more significant impact on student performance at the middle and high school level (Wayne and Youngs, 2003), there is little variation among the grade level configurations within this population.

The schools within this study were classified by the New Jersey Department of Education based on graduation rates and achievement results from the New Jersey Assessment

of Skills and Knowledge. Schools were categorized as low-achieving (Priority or Focus schools) based on low graduation rates, low sub-groups performance, largest gaps in performance between sub-groups, or and lowest performance rates and/or graduation rates within an economically disadvantaged group (Title I). The majority of schools in the population (31.88%) are in the category of lowest performing (bottom 5%) of the Title one schools. These schools are called Priority schools. The fact that Priority is largest classified group within this study supports the research concluding economically disadvantaged students tend to perform at lower levels (Malone, 2002; McKenzie et al, 2005; Mitchel, 2004; National Assessment for Education Progress, 2008; OECD, 2007). Of the Focus schools, the largest group is schools with the Low Graduation rates (26.08%). Low Graduation Rates being the largest sub-group of the focus schools is not surprising given the fact that the nearly half (44.93%) of the population of this study are high schools.

The majority of schools (56.52%) ranked at the lowest DFG rating of A, and 21.74% ranked at DFG B, for a total of 78.25% of the schools ranking in the lowest two DFG categories (A-B). This finding aligns with the well-established conclusion that socio-economic status is the greatest predictor of student achievement (Coleman, 1966; McKenzie et al, 2005; Malone, 2002; Mitchel, 2004; NAEP, 2008; National Center for Education Statistics, 2007; OECD, 2006; Turnamian, 2012).

New Jersey School Report Card data was utilized to provide data on teacher-related variables within the low-achieving population of schools. The faculty average years of experience is 10.44 years lower than a calculated state mean of 17.43 years. This data point remained fairly consistent regardless of school categorization, with means ranging from 9.47-10.73 and medians ranging from 9-11 across all the categories of schools. These results align

with the research concluding there is a positive correlation between teacher experience and student achievement (Akiba et al, 2007; Boyd et al, 2008; Darling-Hammond, 2009).

A combined average of 45.86% of teachers hold advanced degrees. An average of 43.37% of teachers hold a master's degree – higher than the state average of 40.18% (Gemellaro, 2012). An average of 2.49% of teachers hold a doctorate – higher than an identified state average of 1.12% of teachers holding a doctorate (Gemellaro, 2012). This data point also remained fairly constant regardless of categorization, with means ranging from 39.3% to 49.62% and medians ranging from 38% to 55% of teachers holding advanced degrees. The findings of this study suggest agreement with the research of Hanushek's (1989, 1997) concluding there is a lack of empirical evidence that attainment of an advanced degree has a significant impact on student achievement.

The mean teacher attendance for all schools is 92.85 percentage of total possible days with a median range from 94.4 days to 95 percentage of days. These finding are slightly lower than an identified state average of 95.40 percent (Gemellaro, 2012). This supports predominant conclusion within empirical literature that teacher attendance has a positive impact on student achievement (Boswell, 1993; Clotfelter, Ladd, & Vigdor, 2009; Kirk, 1998; Manlove and Elliot, 1977; Miller, Murnane, & Willett, 2007; Woods & Montagno, 1997).

Teacher mobility for all schools had an average of 6.03% of teachers leaving during the course of the school year, higher than an identified state mean of 4.31% (Gemellaro, 2012). The mean ranged across school categories from 3.95% to 9.06%, and medians ranged from 1.9% to 7.3% teacher mobility across classification categories. This supports the conclusion that low-performing schools have increased teacher mobility (Feng 2009, 2010; Haycock, 1998). Moreover, the increased mobility rate in this low-achieving population of school aligns

with the body of research concluding mobility has a negative impact on student achievement (Graziano, 2012; Guin, 2007; New York City Board of Education, 1992).

Results from the discriminant analysis indicated a discriminant function that distinguished between the four school groupings. The discriminant function correctly classified 71.9% of the schools with DFG, teacher's attainment of master's degree, teacher experience, and high school grade-level variables accounting for 64.7% of the variance. The test of contrasts further revealed the variables of teacher level of education, student to faculty ratio, and teacher experience significantly distinguished among the particular classified schools.

Chapter 5: Conclusions and Recommendations

Summary of The Problem

Why are some schools more successful than others in educating students? This point has been a topic of research since The Civil Rights Act of 1964 called for a discovery of the state of the nation's schools. The resulting study, *The Coleman Report* (1966), uncovered a vast disparity of levels of student achievement among schools and populations across the nation. A key finding of this report is that student-related, socio-economic variables have the greatest influence on student achievement (Coleman, 1966). This finding has been affirmed by countless educational studies (McKenzie et al, 2005; Malone, 2002; Mitchel, 2004; NAEP, 2008; National Center for Education Statistics, 2007; OECD, 2006; Turnamian, 2012). Subsequent research has taken care to control for these student-related variables and sought to understand the influence of variables outside the scope of socio-economic status. Even when controlling for socio-economic variables, some schools are more successful than others in educating students (Good and Brody, 1986; Lee and Bryk, 1989; Lee and Burkham, 2003; Teddlie, Reynolds and Sammons, 2000; Witte and Walsh, 1990). These findings return us to the question... why are some schools more successful than others in educating students?

According to Sanders (1998), teachers have the greatest impact on student achievement when controlling for socio-economic variables. Specific teacher-related variables have demonstrated a significant effect on student learning (Akiba et al, 2007; Bayard, 2003; Boswell, 2008; Boyd et al, 1993; Clotfelter, Ladd, and Vigdor, 2009; Darling-Hammond, 2000; Dee, 2004; Goe, 2007; Feng & Sass, 2013; Jordan et al, 1997; Kirk, 1998; Manlove and Elliot, 1997; Mendro, 1998; Miller, Murnane, and Willett, 2007; Sanders and Rivers, 1996; Stedman, 1997; Tingle et al, 2012; Zau, & Rice, 2003). It is important to examine which

teacher-related variables may have a positive or negative impact on student learning. Furthermore, there is a growing body of research indicating there is a higher occurrence of negatively-associated teacher-related variables in lower-achieving populations (Feng 2009, 2010; Haycock, 1998l Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004), thus compounding the problem for low-achieving schools.

Purpose of the Study

This study examines characteristics of a low-achieving population to better understand commonalities within less successful populations. In 2011, the New Jersey Department of Education utilized data from The New Jersey School Report Card to categorize groups of schools as low-achieving. These schools, the New Jersey Focus and Priority schools, provide us with a unique opportunity to examine characteristics of teachers within a low-performing population (see Table 17).

Table 18: New Jersey Focus and Priority School Categories

Focus School- Lowest Graduation Rates	high schools with a 2011 graduation rate lower than 75% (NJDOE, 2017)
Focus School- Largest Within School Gaps	schools with the largest in-school proficiency gap between the highest-performing subgroup and the combined proficiency of the two lowest-performing subgroups; Schools in this category have a proficiency gap between these subgroups of 43.5 percentage points or higher (NJDOE, 2017).
Focus School- Lowest Sub-group Performance	schools whose two lowest-performing subgroups rank among the lowest combined proficiency rates in the state; Schools in this category have an overall proficiency rate for these lowest-performing subgroups of 29.2% or lower (NJDOE, 2017).

Priority School	a school that has been identified as among the lowest-performing five percent of Title I schools in the state over the past three years, or any non-Title I school that would otherwise have met the same criteria (NJDOE, 2017)

Some research has shown specific variables impact student achievement to a greater extent at the middle and high school levels (Boyd et al, 2008; Goe, 2007). Therefore, this study will describe the teaching force within a locally identified population of low-performing middle and high schools. Gaining insights about the teacher population will allow for further analysis of both the potential influence of the teacher on student achievement and types of teachers that are attracted to and retained by lower-performing schools. This knowledge will provide insights to both educational leaders and policymakers when creating and implementing policies related to staff employment.

Summary of Methodology

Descriptive statistics were used to analyze a population (N=69) of low-achieving schools (Focus and Priority schools) and to further understand characteristics of the teachers employed within these schools. Data was used from the three School Report Card years, 2008-2009, 2009-2010, and 2010-2011 – the same data collection period used by the NJDOE to classify a group of schools as Focus and Priority schools. Experience, level of education, attendance, and mobility are specific teacher-related variables from the New Jersey School Report Card (see Table 18) that have a demonstrated impact on student performance (Akiba et al, 2007; Bayard's, 2003; Boswell, 1993; Boyd et al, 2008; Clotfelter, Ladd, & Vigdor, 2009; Darling-Hammond, 2009; Graziano, 2012; Greenwald et al, 1996; Guin, 2007; Hedge et al, 1994; Kirk, 1998; Manlove and Elliot, 1977; Miller, Murnane, & Willett, 2007; New York

City Board of Education, 1992; Tingle, 2012; Wayne and Youngs, 2003; Woods & Montagno, 1997). Descriptive statistics were used to better understand the credentials (experience and level of education) and characteristics (attendance and mobility) within this teaching population. A discriminant analysis determined a combination of variables that distinguished categorization among the four groupings of Focus and Priority schools.

Table 19: Influential Teacher-related Variables from the New Jersey School Report Card

Percent of Faculty Possessing a MA/MS	Percentage of faculty holding a master's level degree
Percent of Faculty Possessing a PhD/EdD	Percentage of faculty holding a doctoral level degree
Years of Experience	Average number of years teaching in public schools for all of a school district's teaching staff
Faculty Attendance	Average percentage rates of attendance, including professional days, for all school faculty members during one school year
Faculty Mobility Rate	Average percentage of faculty members who leave the school district over the course of one school year

Conclusions and Implications

School Characteristics

The low-achieving schools in this study are predominately general education schools (97.1%). All of the schools are public schools, since private sector schools are not required to participate in state testing and do not receive a New Jersey State Report Card (NJDOE, 2018a). Since no charter schools were categorized as low-achieving, these results suggest public

schools are less successful than charter schools. However, these results are misleading based on several other variables. First, there is a disproportionate number of charter schools (88), compared to the number of operating public schools (2,516) in New Jersey (NJDOE, 2018b), thereby substantially decreasing the probability of charter schools being categorized. Furthermore, charter schools are predisposed to have an advantaged population. According to Tienken (2011),

> *"...students in charter schools come from homes that are more economically stable (less poor), have higher prior achievement levels, do not require special education or ELL services, require less intense medical services, and in general have more parents and guardians with more resources to support their education," (p. 3-4).*

Several other researchers have noted the same economic disparity (Asher et al, 1999; Baker, 2011; Miron et al, 2010). The fact that no New Jersey charter schools were categorized as low-achieving as part of the New Jersey Focus and Priority school classification system should not be interpreted as a success to the schools and teachers within them without further research comparing the charter and public schools and teachers that have taken care to control for socio-economic status and other student-related variables. Socio-economic status of students has been proven time and time again to have the greatest impact on student achievement (Coleman, 1968; Malone, 2002; McKenzie et al, 2005; Mitchel, 2004; National Assessment for Education Progress, 2008; OECD, 2007).

Analysis of the District Factor Group Rankings of the schools within the study provides further evidence of the influence of socio-economic status on student success (Coleman, 1966; NAEP, 2008; National Center for Education Statistics, 2007; OECD, 2006). District Factor Grouping rankings categorize schools based on seven variables of a town's population: attainment of high school diploma, attendance of college, occupation, income, unemployment,

poverty status, and population density (Bao et al, 2006). In other words, the DFG ratings provide a relative depiction of a school population's socio-economic status. The majority of the schools in this study, 29 (56.52%), have the lowest DFG ranking of A, and 15 schools (21.74%) have the second lowest DFG ranking of B. Specific to the low-achieving school categorization of the schools in this study, several researchers have found there is a negative correlation of the New Jersey DFG ranking to student achievement (McKenzie et al, 2005; Malone, 2002; Mitchel, 2004; Turnamian, 2012). This study supports the findings that New Jersey schools with lower DFG rankings are more likely to have lower rates of student success. Categorizing these schools as low-achieving fails to take in account variables outside the control of the schools. This leads to faulty assumptions that school and teacher-related variables need improvement.

The largest percentage of schools within the four New Jersey Focus School categories is schools with the Lowest Graduation Rates (26.08%). This finding must be interpreted with caution given the fact that the population of this study did not include elementary schools. Since the population consisted primarily of high schools (44.94%), there is a disproportionate number of schools that would qualify based on graduate rates, thus skewing the data in favor of low graduation rates. Nonetheless, of the four potential categories for classification: Low graduation rates, Lowest performance (on the NJ ASK or HSPT), Largest Within School Gaps, and Priority School (poor and low-performing), the largest percentage of schools are Priority schools (31.88%). This provides further evidence of the influence of socio-economic status, specifically family income, on student achievement.

Although not a major implication of this study, an additional data point incorporated a grade level descriptive analysis of the schools within the population. There is little notable

variation in grade-level configurations within this low-achieving population, with the majority of schools (44.93%) being high schools (grades 9-12) and slightly fewer middle schools (42.02%). These results are as expected since grade span was narrowed by the researcher to include grade levels six through twelve based on research indicating teacher-related variables are more likely to impact student achievement at the middle and high school level (Wayne and Youngs, 2003). Furthermore, as per the Technical Overview of the Calculation of Priority, Focus and Reward schools (NJDOE, 2017b) graduation rates is one of only five criteria points utilized to classify schools as low-performing, thereby increasing the likelihood of high schools being classified as low-achieving. Therefore, based on this study, one should not conclude that grade-level configuration is influential on student achievement.

Recommendations for Policy and Practice

Despite research indicating socio-economic status has the greatest influence on student achievement schools not only in New Jersey, but across America and internationally, are often compared without proper consideration of socio-economic variables (Hopfenbeck et al, 2018). If the intention is to determine which schools are more or less successful, it is critical to conduct comparisons, as well as research, that controls for socio-economic status and other variables outside the control of the schools. This would allow for valid conclusions about policies within the control of the schools to be accurately identified as more or less successful. Furthermore, state and national laws that provide funding used to target improvement at low-achieving schools could be more appropriately allocated. Once controlling for SES, schools identified with low achievement could then focus on supporting curriculum and instruction. Conversely, state and national policies with schools identified as low-achieving with a correlation to low

SES demographics could have an appropriate focus on rehabilitative resources for the town's population in regard to education and employment of the adult population.

In regard to the more local practice of comparing schools, most predominantly through the New Jersey School Report Card, or historically through the Priority, Focus and Reward school classification, it is critical to resurrect the District Factor Group Ranking or develop a similar ranking system based on socio-economic variables. This would allow both the public and the educational community to make valid conclusions and comparisons of school effectiveness. The economic stakes are high when both current and historic national policies such as A Nation at Risk, No Child Left Behind, Goals 2000, and ESSA shift millions of dollars to schools deemed underachieving. At the state level, Regional Achievement (RAC) Schools, Priority and Focus Schools, and School Improvement Grants (SIG) allocate large sums of money through grants and professional assistance targeted at improving school performance. The purpose here is not to suggest school funding school not be provided to economically disadvantaged schools. As set forth in 1985, by the Abbot versus Burke decision, the challenges in educating poorer New Jersey school districts must be met with additional efforts and, certainly, funding. The point is it is a faulty assumption the schools themselves are the dominant factor in student achievement if socio-economic variables have not been properly controlled for in such categorization. If money is inappropriately directed toward school-related variables, a huge sum of money is being misallocated and misused. It is critical to ensure valid conclusions are made regarding which schools are more and less successful in educating our students so as to accurately identify best practices in education and support schools and towns with initiatives that will, in fact, have a significant impact on student performance.

Teacher-Credentials: Experience and Education

A teacher's level of experience has proven to have a positive effect on student achievement (Akiba et al, 2007; Boyd et al, 2008; Darling-Hammond, 2009). The results of this study suggest agreement with this body of research. The low-achieving schools within this study have a mean of 10.44 years of experience, comparatively lower than the state mean of 17.43 years for all teachers in New Jersey's schools.

The impact of the teacher's level of education has been debated within the empirical literature with research indicating advanced degrees do not statistically impact student performance (Hanushek's, 1989 and 1997) and a body of research concluding attainment of an advanced degree does have a positive influence on student achievement (Hedge et al, 1994; Greenwald et al, 1996; Wayne and Youngs, 2003). Within this population of low-achieving schools, teachers have an average lower attainment of advanced degrees.

These findings are important given the fact that teachers with less experience and lower levels of education are more likely to be employed by low-performing schools, and conversely teachers with more experience are more likely to be employed by high-achieving schools (Feng 2009, 2010; Haycock, 1998; Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). It is important to note lower-achieving districts statistically are predominantly *economically disadvantaged* districts (Tienken, 2011). This may place low-achieving districts at a financial disadvantage when needing to hire staff and retain staff and increase the likelihood of teachers with superior credentials being employed by higher-achieving schools.

Recommendations for Policy and Practice- Teacher Recruitment

In school districts where student achievement is low, certainly hiring the most qualified candidates is critical. Moreover, low-performing schools are more likely to attract staff with

lesser credentials, thus compounding the problem. It is essential for such school districts to be vigilant and strategic about teacher recruitment.

Reputation impacts the ability of schools to attract high-quality teachers (Ingersoll, 2011). School leaders in low-achieving schools need to highlight and promote school-wide improvement and high-quality programming initiatives within the school (Feng, 2009, 2010; Haycock, 1998; Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). Climate and culture, teacher morale, and high-quality district professional development are instrumental in improving the reputation of the school. Promotion of such has the added benefit of communicating value towards teachers. District newsletters, promotion of school initiatives, and website design are all important ways to elevate the reputation of the school and increase the likelihood of attracting the best candidates.

When it comes to hiring, administrative planning needs to be timely and forward thinking. It is critical to identify staff needs and use data to help determine the greatest attributes needed in new hires. These needs are not always directly related to teacher certification. According to Gershenson et al (2017), minority students benefit when being taught by same race teachers. However, Gershenson et al (2017) cautions a diverse population is also important. Additionally, teachers who are able to relate to the community in which they serve are more likely to be attracted to and stay employed in such districts. Teachers who live locally may have an advantage when understanding challenging and diverse student populations. When teachers live locally, there is the added benefit of decreased chance of mobility. Such considerations must be weighed by administration when creating needs inventories for new hires.

Vigilant recruitment practices increase the hiring pool and subsequently increase the probability of hiring more qualified candidates. Schools may be tempted to follow minimal job posting requirements, which in some cases may be as little as an internal posting, however, aggressive advertisement practices will ensure better hires, thus reaping financial gains later. When posting advertisements, consideration of aesthetics and sending the right message are crucial. Attractive classified postings are more likely to catch the eye of top candidates. Including statements about commitment to diversity or other identified needs will also go a long way to attract the right people for the job.

In order to attract teachers with higher levels of experience and education, negotiating contract terms within low-achieving districts should be prioritized to incentivize and reward teachers with advanced degrees and higher levels of experiences. This will increase the likelihood of attracting teachers with advanced credentials and reduce the likelihood of staff mobility. Schools should also look for ways to partner with colleges. Often grant opportunities can provide pay to internships which would otherwise go unpaid. These opportunities increase the hiring pool and promote attainment of advanced degrees.

Recommendations for Policy and Practice- Retainment and Promotion of Staff with Advanced Credentials

Retaining good teachers should be of utmost importance particularly in districts where mobility and attrition are a concern. Teachers stay where they feel more valued. First year teachers, whether new to the profession or the district, need extra support. Coggins and Diffenbaugh (2013) recommend a three-prong approach when supporting new teachers. This consideration is important since new teachers are acclimating to a host of new variables within

their environment. First, consideration must be given to placements. New teachers should be carefully assigned positions that offer the greatest chance for success. Assigning new teachers the most difficult students for example can compound frustrations as new teachers learn to navigate an entirely new culture. Second, recognition is essential. Ongoing feedback goes a long way to help teacher morale and confidence. Lastly, feedback must be carefully balanced with autonomy. Teachers feel more valued when they are given a fair amount of latitude to implement instructional practices of their choosing.

Promoting continuing education for current teaching staff members is also important. Some states, such as Pennsylvania, require teachers to obtain a master's degree within a specified time period. Since research indicates a teacher's level of education has a positive impact on student achievement, instituting a state level policy warrants consideration. At the school level, it is standard practice within New Jersey's public schools to reward teachers' level of experience, as well as educational attainment, with increased pay within a negotiated pay scale. As teachers' years of experience go up, so does their pay. Additionally, teachers are rewarded with increased pay as they accrue credits towards advanced degrees. Low-performing districts need to ensure they offer competitive compensation to teachers with district longevity as well as educational advancement.

At the state and federal level, funding could be allocated to low-achieving districts to provide grants targeted at financial incentives for teachers to gain educational credits. Currently, federal loan forgiveness programs, such as the Perkins Loan Cancellation Program, grants eligibility for student loan forgiveness to teachers working in schools serving low-income families. Maintaining programs such as these, and expanding them to include low-

achievement schools, would help increase the likelihood of teachers with advanced credentials seeking employment in low-achieving districts.

Teacher Characteristics: Mobility and Teacher Attendance

Teacher attrition has been a longstanding concern in the field of education. According to Ingersoll (2001), as many as half of all new teachers leave the profession entirely in the first year. This concern is far greater in schools with higher rates of poverty (LiCheng, 2014). Specific student-related variables including family income, ethnicity, and academic achievement negatively impact student mobility (Hanushek, Kain, and Rivkin, 2004; Imazeki, 2004). Even after controlling for these variables, the single factor of low-student achievement has a positive correlation to teacher mobility (Feng 2009, 2010; Haycock, 1998). Therefore, since the majority of low-achieving schools in this study have lower DFG ratings, and high rates of low-income families, one would expect to see higher rates of mobility, as is the case. The average mobility rate for the total population in this study is 6.03% of teachers leaving the school over the course of a school year. In comparison, this is higher than an identified mean mobility rate for New Jersey of 4.31%.

Although some research exists to the contrary (Cay, 2007; Webb, 1995), the majority of research concludes teacher attendance has a positive impact on student achievement (Bayard's, 2003; Boswell, 1993; Clotfelter, Ladd, & Vigdor, 2009; Kirk, 1998; Manlove and Elliot, 1977; Miller, Murnane, & Willett, 2007; Tingle, 2012; Woods & Montagno, 1997). On average, teachers in the low-achieving schools within this study attended school fewer days (92.85% of days) than the state average (95.4% of days). This supports the notion that continuity of program delivery from certificated a staff member impacts student learning. Furthermore, the research of Olsen (1991) concludes sporadic delivery of instruction from

substitute teachers, has a negative impact on student learning. Of particular relevance to this study is the research of Tingle et al (2012) whose findings indicate a teacher's absence has a greater impact on student achievement in schools where the overall teacher attendance is poor. This is likely correlational and may be explained by the existence of additional demographic characteristics that are more likely to be present in schools with high rates of teacher absenteeism. It is important to consider the demographics of the student populations within lower-achieving schools. As per Tienken (2011), economically-disadvantaged schools, have an increase in English Language Learners (ELL) and special education populations, as well as less support from parents, and fewer community resources. It is logical to conclude educating these students is far more challenging thus contributing to teacher absenteeism and ultimately attrition (mobility).

Recommendations for Policy and Practice

Teacher mobility and absenteeism both have a demonstrated impact on student achievement. A recent report from the U.S. Department of Education listed teacher attendance as a leading factor influencing student achievement (Peters, 2012). "We know there is no single greater school-related influence on the achievement of a student than his or her teacher," (Matlach, p. 1, 2016). If the teacher is not in school to teach, there is a negative impact on students, thus teacher absenteeism negatively impacts student achievement. Of particular relevance to this study is the research of Tingle et al (2012) whose findings indicate a teacher's absence has a greater impact on student achievement in schools where the overall teacher attendance is poor. This is likely correlational and may be explained by the existence of additional demographic characteristics which are more likely to be present in schools with high rates of teacher absenteeism. It is important to consider the demographics

of the student populations within lower-achieving schools. As per Tienken (2011), economically-disadvantaged schools, have an increase in English Language Learners (ELL) and special education populations, as well as less support from parents, and fewer community resources. It is logical to conclude educating these students is far more challenging thus contributing to teacher absenteeism and ultimately attrition (mobility). Miller's (2012) article tells how pronounced this problem is in Camden, New Jersey's public schools:

> *"On any given school day, up to 40 percent of teachers…are absent from their classrooms… (which) contrasts sharply with the 3 percent national rate of absence for full-time wage and salaried American workers, and the 5.3 percent of absence for American teachers overall," (p. 2).*

Although sick days are a school-level, union-negotiated item across America, some states set parameters as to how many sick days may be given to teachers in a school year. At the high end, Ohio state law dictates teachers must be given a minimum of fifteen days, in contrast, Mississippi provides for seven (Miller, 2012). In an effort to decrease teacher absenteeism, New Jersey should consider a state policy capping the number of sick days teachers are allowed to take annually.

When addressing the concern of teacher absenteeism, it is essential to consider the culture of a school. Certainly, a negative school culture influences a teacher's motivation to be in school, but an often less considered point is the staff's attitude toward absenteeism itself. If repeated absence is a norm for a school, it is reasonable to assume the likelihood of teachers being absent increases. There are low cost and manageable ways to address the absence culture. School leaders should take the time to discuss attendance patterns with individual teachers. For example, instances when teacher absences occur repeatedly on Mondays, Fridays, or attached to a break warrants a conversation between the principal and the staff member regarding the

observed pattern. Once attendance rates begin to dip, generate a pattern, or cumulative absences occur, supervisors and principals should take care to meet with the teacher and emphasize the importance of teacher attendance due to the immediate impact on student learning. Strengthening teacher contract language to require doctor's notes in such cases would also help address the problem of teacher absenteeism.

A common professional development practice is to provide release time to teachers during the school year and place substitute teachers in the classroom. Although not counted as a sick day, this practice results in teacher absence from the classroom. These absences could be eliminated through incentive-based budgeting that provides pay to teachers who attend professional development beyond normal school hours. Paying teachers to attend professional learning opportunities would eliminate the impact on student instruction. Additionally, it encourages and rewards teachers to advance their learning, thereby reducing the likelihood of teacher mobility.

Students within low-performing schools have an increased rate of ELL and special education students and often have less support from parents (Tienken, 2011). Meeting the needs of these students may present with additional challenges for teachers with specialized skill sets. Increasing teacher-to-teacher support and collaboration has a proven positive impact on teacher attendance and has been shown to reduce mobility (Ballou and Podgursky, 1998; Smith and Ingersoll, 2004). Administrators in lower-performing schools should provide increased opportunities for professional development which specifically addresses challenges teachers often face when working with diversified student populations. Additional funding from ESSA and Title II funding provides opportunities for schools to utilize funding toward professional development. This funding could be targeted to increase teachers' skills in

working with more challenging populations. Addressing teacher needs when working with more challenging populations would decrease the chance of teacher absenteeism and attrition in low-performing schools.

High quality professional development for teachers has been proven to reduce teacher attrition and absenteeism (Ballou and Podgursky, 1998; Smith and Ingersoll, 2004). Interestingly, schools with high rates of absenteeism often not only have problems with teacher attendance during instructional hours, but also teacher attendance at professional development is of greater concern (Ingersoll, 2004). Attendance policies and difficult conversations may have a positive impact on teacher attendance, however alternate tactics must be considered. At Lewis Central Middle School in Iowa, the principal replicated a successful student behavioral rewards program to target increased teacher attendance during instructional time and professional learning community meetings. Although there is limited research regarding the results of incentive-based, positive reinforcement in schools where attendance is of concern, school leaders should experiment with such programs and evaluate the impact on school attendance rates.

Teacher attendance may also be encouraged by offering payment for unused sick days. Some districts offer a one-time buy-out of sick days as retirement incentives for teachers. This reward payoff could decrease teacher absenteeism. Alternatively, instituting a practice of paying teachers annually for unused sick days would communicate teacher attendance is valued and would also likely result in increased teacher attendance.

Some states and districts utilize punitive measures to discourage teacher absenteeism. According to National Council on Teacher Quality (2014), several districts across the nation have been identified as explicitly tying teacher attendance to annual evaluations. Still other

districts use attendance data as a criterion point for rehiring and promoting staff (National Council on Teacher Quality, 2014).

Quality teacher-to-teacher mentoring programs have been proven to reduce teacher absenteeism and attrition (Ballou and Podgursky, 1998; Smith and Ingersoll, 2004). Although teacher licensure requires all first-year teachers to have mentors, it would be beneficial to fund programs that would pay teachers to mentor any teacher not only new to teaching, but new to working with student demographics of lower-achieving populations.

A highly competitive workforce is a critical factor for improving student learning (Podolsky, et al, 2106). Salary is a primary cause of teacher attrition; college graduates in fields other than education with commensurate experience and educational levels earn up to 20 percent more pay than teachers (Podolsky, et al, 2106). Within the educational profession, teacher salary can vary district to district. In low-achieving school districts, school boards need to ensure salary and benefit packages are competitive not only with state teachers' package norms, but also with other local professional opportunities within the middle class. Current provisions of the federal Every Student Succeeds Act (ESSA) and Title 1 funding provide opportunities for school districts to utilize funds for staffing targeted at increasing student performance in low-income (often low-achieving) schools.

School Classification and The Achievement Gap

This study sought to better understand the type of schools classified as low-performing. It is not surprising to find that the lowest performing schools are, in fact, predominantly the lowest district factor groupings (DFG) since this is representative of socio-economic status. It is further not surprising to find the teachers within the lowest performing schools tend to be less prepared and less experienced. This study then sought to further understand the

phenomena of classification among the four type of low-achieving schools. The discriminant analysis revealed a function which significantly distinguishes between the four school groupings. A specific combination of predictor variables (experience, advanced degree, DFG, and grade level) suggest that these variables create conditions which widen the achievement gap among sub-group populations within the low-achieving schools themselves.

Recommendations for Policy and Practice- The Achievement Gap

Within instructional populations there may be a specific, disadvantaged populations at-risk for academic failure. This notion is hardly new within the educational community. However, the results of this study indicate specific teacher-related variables increase the chance for lower-performance of specific groups of students. As indicated in this study, this is more likely to be the case in middle school populations. As discussed earlier, it is critical to employ proactive strategies related to staff recruitment within low-achieving schools. However, the results of the discriminant analysis reveal something further since there are notable gaps in achievement between sub-groups within low DFG schools.

To alleviate achievement gaps, school leaders must take a data-driven approach. Benchmark assessments are an essential tool for monitoring progress throughout the school year. Such assessments can provide critical sub-group data allowing educators to ensure adequate progress across every ethnic, gender, ELL, special education and economic sub-group with its population of students. This progress monitoring will allow educational leaders to then match the most prepared teachers to the underperforming subgroups.

The discriminant analysis further distinguishes variables specific to each school classification. This information is helpful for school leaders when making staffing decisions relative to each school.

Since the variables student-faculty ratio and percentage of faculty with Master's degrees were significant predictors for classification schools with Between Sub Group Gap Schools, school leaders of Gap Schools should prioritize

Student-faculty ratio and teacher experience were found to be significant predictors for schools classified as Low Performing Schools.

Student-faculty ratio and teacher experience were found to be significant predictors for schools classified as Low Performing Schools.

Future Research

The declassification of Focus and Priority Schools warrants further investigation. Since the 2013 categorization of the 258 Focus and Priority schools, 12 Priority schools have been declassified. In a recent press release, Rosie Grant, executive director of the Paterson Education Fund states,

> *"These schools met the exit criteria defined by the NJDOE. If they aren't on the targeted or comprehensive list, it also means they are not at the bottom 5 and 10% amongst their peers in NJ. Let's keep in mind that they need continued support to keep them from falling back into status next year,"* (Raymond, 2018, p. 1).

Since Priority schools must fall within the bottom 5% of Title 1 schools, declassification criteria, although not readily discoverable, must presumably be based on an increase in performance rankings among Title I schools. Whether this increase in performance should in fact be a credited to internal measures targeted at increasing performance, or more likely, an increase in the populations socio-economic variables, certainly warrants investigation. Additionally, a study yielding discovery of all the Priority school's socio-economic variables should be conducted. It would be interesting to see if there is a correlation

between DFG or family income and Priority school status. Furthermore, a study should be conducted to investigate if a predictive model for Priority school status could be developed using student-related variables within of all Title I schools.

Additionally, the following studies are recommended for future research:

1. An investigation of the correlation between SES status of the town and teacher's level of experience and education within lower achieving schools should be conducted.
2. Since high school rates of teacher absences may be a sign of a dysfunctional school culture, the link between school culture and teacher absenteeism warrants additional investigation. Research should investigate other possible school variables that influence teacher absenteeism.
3. The financial costs of teacher absenteeism is of concern. Further research should be conducted to further uncover the financial cost of teacher absenteeism.
4. Research suggests there are higher rates of teacher absenteeism in middle and high schools (Miller, 2012). A case study or qualitative study would help uncover the reasons and determine if grade level has a causational, not just correlation relationship, to student achievement.
5. Incentive-based programs that reward teacher attendance is a relatively scarce practice. Conducting case studies to evaluate and analyze the effects of such programs needs further investigation. Lewis Central Middle School in Iowa is one example of a school that recently utilized competition, rewards and positive reinforcement targeted at reducing teacher absenteeism. This school provides researchers with a unique opportunity for a case study.

6. A case study of within a declassified Priority school would provide further information about correlating variables within low-achieving schools with demonstrated progress. Such a study would only be warranted if the cause of declassification was determined to be based on improvement in student achievement, and not due to removal of Title 1 status.
7. Since teacher mobility rates are higher in low-achieving schools, a study should be conducted to further understand causes of teacher mobility within the New Jersey Focus and Priority schools.

The impact of a teacher on student performance is not only a logical conclusion, but one grounded in research (Stedman, 1997; Darling-Hammond, 2000; Jordan et al, 1997; Mendro, 1998; Sanders and Rivers, 1996). National performance indicators, through PISA and NEAP, as well as state level ratings through the New Jersey School Report Card, has led to comparisons of schools and teachers, and sparked an enhanced focus on standards for teacher certification. State-wide policies, including Highly Qualified Teacher (HGT) and Achieve NJ, highlight the belief that teachers impact student performance and therefore must be held accountable. Continued research which seeks to further understand the complex and dynamic characteristics of the most ineffective schools, and more importantly the teachers within them, is critical in today's ever-changing educational landscape and a necessary lifeline for the struggling students in many schools across New Jersey and the Nation.

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